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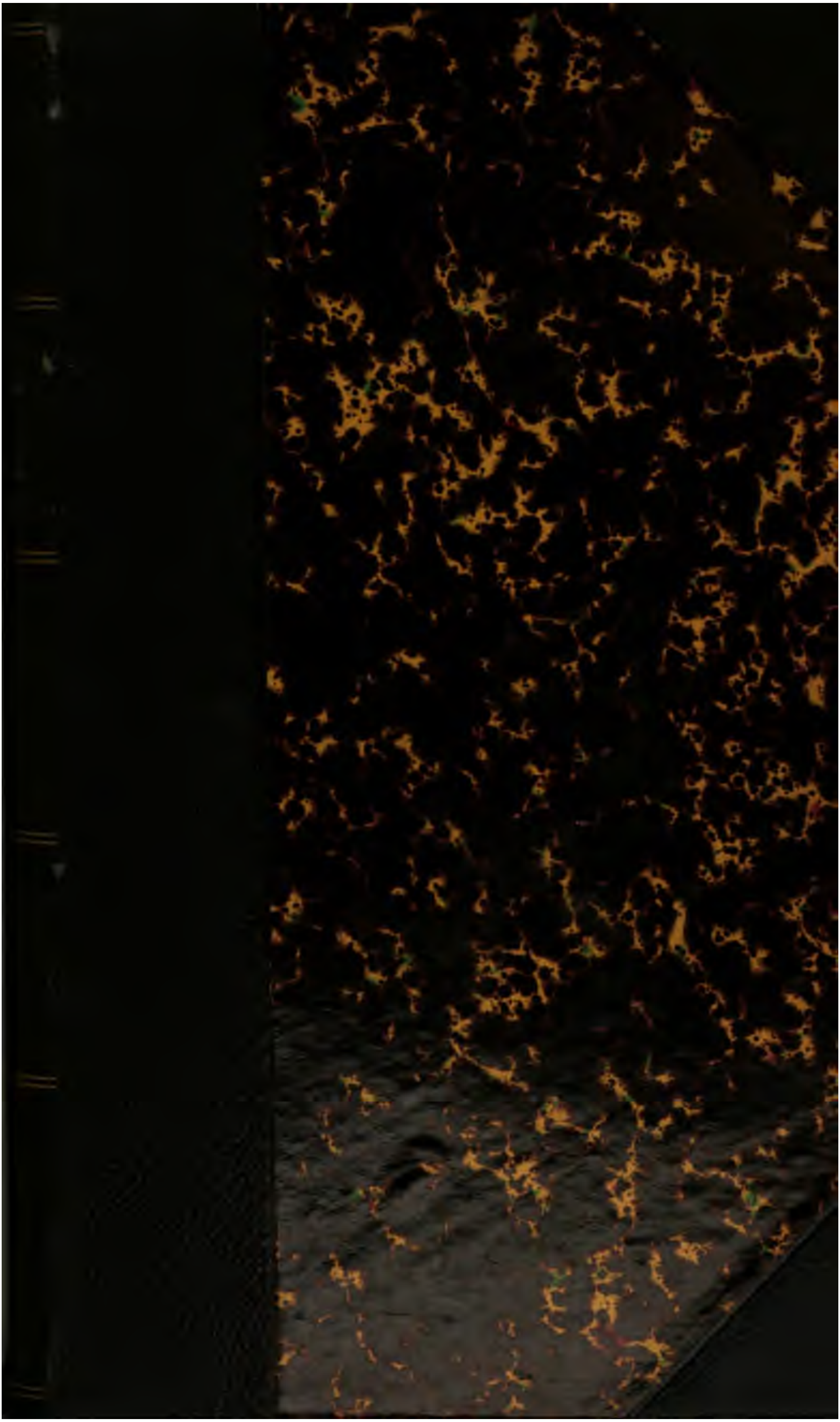

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EDITED BY
SIR JOHN W. MOORE, B.A., M.D., M.CH. DUBL., D.SC. OXON.;
EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND;
SENIOR PHYSICIAN TO THE MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY;
CONSULTING PHYSICIAN TO CORK-STREET FEVER HOSPITAL;
EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN;
FELLOW OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

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PART I.

ORIGINAL COMMUNICATIONS.

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Art. I.—*A Further Series of Enucleations of the Prostate.*[a]

By Sir William Thomson, C.B., F.R.C.S.I.; Surgeon to the Richmond Hospital; Hon. Surgeon to the King.

In a paper read before this Section of the Academy and in communications to the journals I have already written on the removal of the enlarged prostate by the suprapubic route. I have dealt with the question whether the high operation or the perineal is the more generally applicable, and which is the safer and the quicker. These are very important considerations when we remember that the majority of our patients are of advanced age, broken down by the insufferable distresses and the pathological mischiefs of the affection; and after some experience I may state my position. I adhere to the view which I originally expressed—that the suprapubic method is in most cases the best. I am aware, of course, that this opinion is not universally held, but I think I may assert confidently that the great majority of those surgeons who have operatively treated enlarged prostate have pronounced in favour of the suprapubic procedure.

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[a] Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, May 11, 1906.

In this paper I do not intend to raise any serious controversial topic. Who was the originator, whether the gland is removed with its capsule, or without it, are not matters with which I shall venture to trouble you. But I wish to record some additional cases in my own practice, and to refer to a few points which have interested me. The operation has sprung into much prominence, and has been widely practised, but as in all cases of new methods there is a good deal to be learned and reported before we arrive at the high level of great comparative safety.

Results.—I submit a tabular list of the cases of enucleation which I have so far done, and the structures which I have removed. They number eighteen in all. The list does not include cases in which I have explored the bladder by the superior incision or established a fistula when the patient's condition was so bad or the age so advanced that it would have been a fatal procedure to carry out enucle-

	Age	Date	Result
1. J. I.	66	1902	R.
2. J. D.	75	1902	D.
3. J. T.	60	1902	R.
4. W. H.	63	1902	R.
5. U. E.	68	1903	D.
6. T. W.	53	1903	R.
7. M. H.	70	1904	D.
8. P. C.	76	1904	R.
9. W. D.	70	1905	R.
10. J. L.	70	1905	R.
11. A. M.	60	1905	R.
12. J. R.	58	1905	D.
13. J. L.	70	1905	R.
14. C. M'P.	74	1906	D.[*]
15. M. N.	54	1906	R.
16. J. S.	72	1906	R.
17. J. G.	70	1906	R.
18. B. B.	65	1906	R.

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[*] Twelve weeks later, of gangrene of lung.

ation, or cases of malignant disease; nor do I include a case which I did two months ago, in which all the symptoms of prostatic obstruction were present, but with no evidence of enlargement in the rectum. It was one of the rare examples of prostatism without enlargement, but it does not come within the scope of the present communication. Nine patients were over seventy years of age; the youngest was fifty-four and the oldest seventy-six. Two of the tumours were of very large size—6¼ ounces, and another 10 ounces less a few grains. Three came away in one mass, including the prostatic urethra. The immediate and remote results did not differ from those following enucleation of the lobes separately. The patients have had no difficulty in emptying the bladder, there has been no irritation or symptom of stricture at the torn vesical extremity of the urethra, and the function of easy urination has been completely restored.

Phosphates.—One of the troubles which sometimes are associated with the operation is the deposit of phosphates on the edges of the wound. I have had several instances of this. Confined to the edges one expects that these deposits will clear away in about ten days, but they are not always limited in this way. In Case IV. this occurred. The encrustation was very extensive and persistent. The patient had so much distress after some months that I was compelled to open the bladder again. I found the mucous membrane coated with phosphates, and there were two phosphatic calculi. These were removed and the deposit was dealt with. There was subsequent copious irrigation, and suitable internal treatment, but when he went home a good deal of irritation still remained, and there had been a recurrence of phosphates. This is the only case in which there has been any persistent phosphatic deposit.

When the prostate has been removed the covering of it which remains in the bladder is very thin. It has been in some parts subjected to much bruising, and its vitality is distinctly lowered. Some of this occasionally dies, and upon it deposits of phosphates may occur. In two cases this happened, and the fragments, finally detached, were extruded through the wound. This offers another reason why the opening into the bladder should be shaped by a large tube, about three-quarters of an inch in diameter, for it affords ample space for free washing out and the carrying away of *débris* and deposit.

In my last ten cases this condition has occurred only three times. In the instances in which there has been no appearance of it I have noticed that there has not been any preceding chronic cystitis, the patients have responded to preliminary treatment satisfactorily, and the bladder has been brought into a fairly healthy state by rest, the careful use of the catheter, washing out, and the administration of some drug to secure acidity of urine. When the symptoms allow of such a course I regard it as of the utmost importance. I have tried the acid phosphate of sodium and several other drugs in the post operative course of the case, but I think on the whole I have had the most satisfactory results from benzoate of sodium in ten-grain doses, with a drachm of tincture of buchu, three or four times a day.

Flushing.—But with this must be associated copious flushing of the bladder with boric solution. I have pointed out the importance of a large bladder opening. For some time I have rarely used the catheter for washing out. I suspected that it sometimes did mischief, and so I adopted the plan of first flushing through the upper wound. But this alone is apt to be deceptive. If you pass a stream directly through the bladder wound you will soon find that the fluid is returning perfectly clear. But this current does not effectively stir up the deposit which is lying about the base of the bladder and the original site of the prostate. When I have finished this stage of the washing I pass into the urethra a glass nozzle, about three or four inches long. It should have as wide a mouth as it will carry. Attached to a syringe or an irrigator it conveys the fluid in a full stream into the bladder. The clots or other deposits of pus and phosphates are displaced, mixed with the current, and discharged through the suprapubic opening. You will be often surprised to find how much dirt you will get out of a bladder which you may regard as perfectly clean if you confine yourself to the single route washing.

Sloughing.—A more serious danger is the existence of extensive sloughing in the wound and the infection of the layers of cellular tissue in continuation with it. This is especially apt to occur in patients who have large and pendulous abdomens. I lost Case VII. by infection of the deeper parts of the space of Retzius. Sloughing occurred, and it was only towards the end of the third week that the patient showed urgent symptoms. Then I discovered an abscess which I opened above Poupart's ligament, but he died on the twenty-third day, although I had regarded him as quite safe a week before.

A fortnight ago I operated on a gentleman (Case XVIII.) of this type, assisted by Mr. Tobin, Mr. H. Rutherford, and Dr. Boyd.

He had long been troubled with urinary difficulties, but the week before, for the first time, he had complete retention. He was seen by Dr. Gorham, of Clifden, and Dr. Loftus, of Roundstone, but they failed to get in a catheter, and Dr. Gorham very skilfully aspirated above the pubes. As the obstruction could not be overcome, the operation was repeated next day, and the patient was at once sent on to Dublin—a distance of 160 miles. I saw him the same evening, and, after some difficulty, succeeded in reaching his bladder. He was in a very low state, and there was cystitis. The prostate was so large that my finger in the rectum could not reach its upper limit. I treated him for a week, and operated on 26th of April. The wound passed through nearly three inches of fat, the bladder was quickly reached and opened, and I then found a prostate of enormous dimensions almost filling the cavity. The right lobe was huge, as I show you, and came away in three portions. The left is much smaller, and was removed in one piece. The total weight is ten ounces, less a few grains, and is the largest I have removed. The enucleation lasted 25 minutes. The upper portions were quickly freed, but the attachments at the base were very close, and required, finally, the use of the two first fingers before the gland could be delivered. Now, in this case I had to deal with a great deal of superficial fat, and a large wound in the abdominal wall was necessary. When my fingers were in the bladder my hand had disappeared in the gap of the surface wound. Much force was necessary, and the operation was most tiring to the hand. In the upper part the edges of the wound have united perfectly. On the third day, however, signs of extensive sloughing appeared. The process passed under the abdominal walls on either side for a couple of inches, and the edges lost colour and necrosed. This was sufficient to cause much anxiety.

This untoward complication is especially apt to occur in fat subjects. The tissue is itself of low vitality, and in burying the hand in the wound bruising of the parts is likely to accelerate necrosis.

What I did was to remove a couple of stitches to enable me to expose the deep parts, and then these were bathed in 30 per cent. solution of peroxide of hydrogen. This has been done at each dressing. The temperature has remained normal, the sloughs are separating, the line of demarcation is well established in the skin, and the patient is, I am glad to say, progressing rapidly to recovery.

Hæmorrhage from the Prostate.—Case XI. was one of much interest because of the diversity of the views which from time to time were held regarding it. It was diagnosticated as stone in the kidneys and malignant disease of the bladder. My own independent declaration was that the case was one of enlarged prostate, with possibly a stone in the bladder. I have already published the full details of the case in the *British Medical Journal* of Jan. 27, 1906, but I may here allude to one or two points of great interest:—

The patient was examined in London, and no stones were found. In two days he had retention for the first time, having never previously needed the use of a catheter. He was sent home, and I found him suffering from bad cystitis. In a fortnight he had a bad attack of hæmorrhage, and in spite of all I could do, by means of styptics internally and locally, the bleeding continued. He was greatly weakened, and, having regard to his alarming condition, I suggested that the bladder should be opened and the prostate removed. In this view the gentlemen who helped me in consultation concurred, and the operation was duly performed. The hæmorrhage immediately ceased. I found no less than 32 calculi, which I show you. The prostate weighed 2 ounces. The patient is now perfectly well, and has never had the least return of his former symptoms, although he suffered for a time from a painful spot in the scar which had to be excised.

The failure by an experienced surgeon to find the stones is only another instance of the difficulty that sometimes impedes us in diagnosis. The important matter, however, is the carrying out of a treatment for the hæmorrhage, which, so far as I know, had not before been reported, and I submit it to the Section as an advance in the treatment of such cases which may be established. If we come to the conclusion that the bleeding is from the prostate, and if the discharge is continuous and excessive, not yielding to any other known remedy, I regard the proceeding as urgently called for. In these cases the covering of the gland is often exceedingly vascular, and the veins are enlarged. If from ulceration or other cause a large continuous hæmorrhage is established, particularly from an open vessel, it does not seem reasonable to hope that it will be stopped by styptics. We cannot apply pressure, and we cannot hope that a clot will help us out of the danger, for the temporary covering is certain to be disturbed by the action of the bladder in its efforts to get rid of an offending body. Urine is constantly distilling into the cavity, and helps to increase the expulsive efforts of the patient, so that the essential condition of rest for the permanent healing of the vessel is absent. What, then, can we do in such a case? To my mind there is no other way open to us but to expose the seat of bleeding, to enucleate the prostate if that be necessary, or to plug the bladder.

An Abdominal Tumour.—Case XV. was sent to me as a tumour of the abdomen. It had been seen by several medical men.

The swelling was very easily observed, occupying the middle of the abdomen and extending above the umbilicus. The patient was able to pass a normal amount of urine in a fair stream, but he was disturbed two or three times at night. He felt no pain, and was able to hold water for four or five hours without distress. The tumour was hard, but it did not give the feeling of solidity. I found that he had an enlarged prostate, and on passing a catheter I drew off 58 ounces of urine. This reaccumulated rapidly, and the next trial produced three pints. It was a case of atony due to over-distention, and after a few days I removed his prostate, and in five weeks he went home perfectly well, the tone of the bladder having been quite recovered.

I remember some years ago seeing a case which had been under the care of a surgeon, since deceased, who had declared that the patient was suffering from malignant disease of the colon, and as the gentleman was eighty-four years of age he was advised that operation would be inadvisable. I found a curiously oblong tumour passing obliquely upwards to the right side, and reaching nearly to the liver. Tracing it downwards it passed into the pelvis in the central line. It was dull on percussion, but not solid. I found that he had a very large prostate, and on asking if he had difficulty in passing urine I elicited all the usual symptoms. A catheter solved the difficulty, for the tumour promptly disappeared. I mention this case in connection with the other in order to show that even an experienced surgeon may be misled by a distended bladder, and that the possibility of such a thing should never be forgotten when dealing with tumours of the abdomen.

Dangers of Operation.—What of the dangers of the operation? Apart from the fact that we are dealing with aged persons, who are often broken down by suffering of the most distressing character, there are undoubtedly risks of a serious kind. We make an opening into the bladder suprapubically, and the escaping urine, in spite of drainage tubes or siphonage, does to some extent come into contact with the wound. If the urine is from a bladder which has been severely inflamed, and is putrid, the dangers are increased. It is of importance to limit the risks as much as possible. In the first place, I always secure the cut edges of the bladder wound to the fibres of the separated rectus muscle. Besides lessening the chances of extravasation it has the advantage that when changing the drainage tube the sutures on either side serve as a guide in its re-introduction, and we are spared the risk of breaking down adhesions by trying to push the tube through an opening which in the early stages rapidly narrows.

Then the surgeon is often alarmed by the perilously close approximation of the finger in the bladder to the finger in the rectum. In a thin bladder it sometimes feels as if the least additional effort would make the fingers actually meet. The accident has happened in more than one case; but let me say in passing that the perineal operation cannot claim immunity in this respect, for several cases of recto-vesical fistulæ have been reported as a result of that procedure. I refer to this matter simply to emphasise the lesson that while undoubtedly we must use much force in some cases where the connecting fibres are very tough, our violence must be gentle, if I may so say, and, above all things, under control. There must be no rough pulling upon bands, but a careful peeling off of all attachments, with the finger nail always directed close to the surface of the prostate.

In some cases the peritoneal fold falls freely into the upper part of the wound, and ought to be carefully protected. This may be done by a retractor of the Simon type, or it may be tucked up under a pad of sterile gauze and given in charge of an assistant.

The Trendelenburg position is of use if a close inspection of the interior of the bladder is required, but I never use it for getting the peritoneal fold out of the way. As is now admitted, the position is attended by risks, and in the case of the old patients with whom we have to deal it is especially dangerous to crowd the viscera against the diaphragm and so interfere with the action of the lungs and heart.

Primary Hæmorrhage.—As to free primary hæmorrhage, I have encountered it only once, and I have already reported that case. I have for some time adopted the plan of administering ten-grain doses of chloride of calcium three times a day for one and a half or two days before operation. The result has been entirely satisfactory, and the bleeding during the actual enucleation has been very small.

Drainage.—At the close, water as hot as can be borne by the finger is used to douche the bladder until it returns quite clear, then the disturbed membrane in the position of the prostate is gently replaced, and the tube is secured in the wound. A rectangular glass tube, to one arm of which a rubber tube has been fixed, is passed into the bladder, and to the other arm, which lies on the abdomen, supported by a layer of wadding, a long rubber pipe is attached and passes into a bottle holding a known quantity of water, the level of which is marked. Any rise above this point shows whether urine is flowing, but this can always be seen by looking at a glass joint fixed midway in the length. This plan has been used by Sir Thornley Stoker, and I have found it very serviceable in the first three or four days during which the tube is retained in the bladder.

Fatal Cases.—The mortality may be thus summed up:—One died of ether bronchitis—he was aged seventy-five, and suffered from mitral disease; one died fourteen days after operation from a suddenly-developed peritonitis; one from pelvic cellulitis; one died in twenty-four hours from sepsis; and one died twelve weeks after operation from gangrene of the right lung. This case was sufficiently well to be out of bed for a couple of weeks, and the wound was nearly closed, when he had an attack of purpura hæmorrhagica. He wasted considerably, and all progress ceased. He recovered from this, but four weeks later he had another attack of purpura. Blood came from the bladder, lungs, nose, and intestine. He developed cough and much bloody expectoration. At the *post-mortem* the right lung was in a state of gangrene. This death can hardly be attributed to the operation, and if I omit it I have lost only one in the last ten.

Cases for Operation.—I may say, however, that I have never refused to operate in any case, no matter how feeble or advanced in years, when the question to be dealt with was the attempt to relieve the patient from intolerable distress. I have treated many by means which are generally accepted as less heroic and so often capable of giving a large degree of comfort. It would be very foolish to lay down the law that all cases of enlarged prostate are to be operated upon. Many men have enlarged prostates, but certainly not all enlarged prostates demand removal. But I have no doubt that if the nocturnal distress is great, if the patient has had recurring attacks of retention, if he has suffered from outbreaks of cystitis, if he has had severe hæmorrhage, if he has suffered from any one or all of these, then operation ought to be undertaken. The risks attending these troubles are in a sense more certain than the risks of enucleation. The gratitude of a patient who has been restored to the ordinary method of urination, whose sleepless nights and frequent painful efforts to empty the bladder have gone for ever, impels one who has to do with such cases to urge the advantage of operation. The patients seem to rejuvenate, and are enabled to live a life of peace, at least in this respect.

ART. II.—*Notes on the Training of the Voice.* By HORACE LAW, M.D., F.R.C.S.I.; Throat Surgeon to the Adelaide Hospital; Surgeon to the Dublin Throat and Ear Hospital; Consulting Throat and Ear Surgeon to the Stewart Institution.

IN the limits of the space at my disposal it would not be possible to make a complete *résumé* of the various phases in the training and care of the singing voice, as well as to consider the various pathological changes which may occur, and which would lead to a loss of, or alteration in, the singing voice. But I will endeavour to mention most of the important points, and touch on some others of interest, while not giving a hard and fast opinion where matters are under actual dispute, but trying rather to indicate some of the underlying principles.

It will be useful to mention that while these remarks apply to all who sing, or who are learning to sing, they will naturally apply most to amateurs, as it is well known that most amateurs will not undertake the long course of preliminary training which a professional is willing to do.

Professional singers are content to spend months at simple exercises, both vocal and breathing, before they really attempt to sing at all, and thus, at the outset, they avoid many difficulties. Most amateurs, after a very short time, are anxious to "have a song to sing." At first sight this might not appear to be any harm; but if certain parts, at least, of the voice are being used in an untrained manner it must react and hinder the proper training, and it will invariably require a longer time to become trained than if they began in the laborious manner in which professionals usually do. This is a point upon which considerable weight should be laid; but most teachers must succumb to their pupil, and hurry them on before they are really properly grounded and before the muscles, by use, have become well developed, so as to bear, without fatigue, the strain put upon them.

Some people have no voice, and, no matter how much they are trained, could never produce a really pleasant or agreeable sound (though singing in tune). This does not seem to depend on any deformity actually to be seen in larynx or upper air-passages, or, indeed, on any assignable cause, but seems to be inborn and incurable. The only advice possible for these is—"not to sing."

Others have a voice, but lack training, and here is where a good teacher can be of great help, and can, by that training, develop technique, and give that finish which adds so much to the listener's pleasure.

Again, there are others who have a naturally really fine voice, combined with a really good method of production, and who, if left to themselves, would sing remarkably well, and make very few gross errors. This is the class which is likely to go to the top of the tree, and if they give sufficient time, under proper tuition, to eradicate their mistakes they are sure to succeed.

I will quote Professor Stockhausen on the subject:— "Let me once more remind young pupils that, in order to become a first-class singer, it is not sufficient to possess a good ear, a beautiful voice, and a lively imagination. These gifts of nature, which are common enough, are the *preliminary* conditions of artistic singing, and this can only be attained by unremitting and careful study."

This, I think, may be said to include most of the classes of people who want to sing. No amount of training can give a person a really powerful and pleasant voice who is not endowed, to some extent, by nature. Again, a natural voice may be entirely spoilt by wrong production and faulty advice.

In proceeding to consider the various points with regard to the care and training of a voice the pre-eminent place must be taken by a consideration of the breathing.

It is absolutely necessary that the pupil should learn to have full, and almost unconscious, control over the muscles of respiration, so that he can produce a stream of air, slowly or quickly, under pressure, or very softly, as may be required, without over-filling his chest for the purpose in view, or running short of air before he gets to the end of a sentence.

To produce a pleasant, even note, the air pressure in the chest must be uniform. In other words, the contraction of the muscles must be gradual and even. Any quaking or trembling of the muscles will at once be noticed in a quavering of the note, and I think it is correct to say that usually quavering in a voice is produced by the muscles of respiration far more than by the muscles controlling the vocal chords.

The diaphragm is the most active and important muscle, and in order that it may act evenly, no undue strain from outside sources must be introduced. For instance, in women, anything approaching tight-lacing would hinder its action altogether; and another, though less important, point is that a full stomach greatly interferes with diaphragmatic action.

It is necessary to remember that a note or tone can be produced in two different ways—either by commencing with a closed larynx (festen Stimmeinsatz) or an open one (hauchenden Stimmeinsatz).

The important point to remember is that if a note is to be commenced with a closed larynx the pressure of air behind the chords must not be allowed to be raised so high as to cause undue strain. In other words, just sufficient pressure must be used to cause the chords to vibrate, and yet not enough to cause injury, or overstrain, by forcing them violently apart.

Again, in the commencement by open larynx, the principal fault is usually that too much air is lost before the chords are sufficiently approximated to produce a note.

Either of these faults—that of too high a pressure or too great a loss of air—will rapidly result in a tired voice, and oblige the singer to use more force than is absolutely necessary.

As it is not my province to teach singing I will here only remark that most, if not all, of the best known teachers insist on the "hauchenden Stimmeinsatz" as the method of attack, or, as the French say, "l'émission de la voix"; and it is easy to understand that a pupil will have much more control over the emission of breath in this method than in the "festen Stimmeinsatz."

I do not propose to enter into the actual methods of doing breathing exercises, &c., and have only one other point to mention—namely, that one of the first points for a singer to learn is to have a sufficiency of air for the purpose in hand, and neither to overfill nor unduly empty the thoracic cavity, while, at the same time, allow a sufficient interchange of air for respiratory purposes.

The next point to consider is that the larynx is not completely under voluntary control. As is well known, a large portion of the singing is done by what might be called sub-conscious control. By this I mean that a pupil, by volition, makes a noise or note, but cannot, by volition, arrange the exact movements necessary for it. That seems to be done automatically by the centres concerned, while, on the other hand, the external muscles can be made to raise or lower the larynx at will; and many of the motions can be performed without the resultant note actually being produced. As an example, I can ask a patient to say "Ah," and thus get the chords approximated, but to tell the same patient to close the chords would be useless, as volition could not produce that movement without the help or intervention of a note.

There has been a great deal of discussion as to the position which a larynx should take in the throat, and it appears to me that it may be shortly summed up in this way:—

Some can place their larynx high or low, according to taste; others have less control over it, and it takes up its position of its own accord. Again, some habitually sing with larynx as low as possible, and others hold it in a somewhat higher position, though the rule seems to be—the lower the better. It seems to me that, within limits, this is best left to nature to decide; and if the pupil has not been wrongly instructed previously probably the teacher will have little difficulty in this connection, if the attention of the pupil is concentrated on the quality (*i.e.*, beauty of tone) rather than the quantity of sound produced.

I will quote Stockhausen again:—"Faure, the celebrated French baritone, was the first to draw my attention to this fact. 'The shock of the glottis,' he said, 'unaccompanied by a moderately low position of the larynx, wears out and chafes the voice (éraille la voix). Singers who vocalise with the larynx in a high position have neither fulness nor beauty of tone in their coloratura. It is true that the raised position of the larynx is *favourable to the flexibility* of the voice, but at the cost of *beauty of tone.*' Ch. Bataille expresses quite the same view in his work. (See also Hauser's 'Method of Singing'.)"

One thing is very clear, that any undue strain of the external muscles attached to the larynx will rapidly produce fatigue, and cause various troubles; so much so that I have seen it mentioned by an American author (whose name I cannot remember) that singers' nodes are due to faulty contractions of the external muscles. I do not pretend to agree with him, but I merely mention it to show the importance of preserving these muscles from undue strain.

Without the upper air-passages a note produced in the larynx would have little resonance, or timbre, to make it pleasant to listen to, and I think certainly the most common troubles which affect and spoil a voice are found in the resonating chambers, not in the producing chamber (larynx). The mouth, pharynx, naso-pharynx, nose, and accessory cavities all contribute their quota to its resonance; and blocking or malformation in any one must inevitably produce some alteration in the resonance, which will be detrimental to a perfect voice-production.

The various pathological changes found in the upper air-passages act to the detriment of the voice in several different ways:—Firstly, by loss of resonance, due to obstruction; secondly, by congestion, which spreads downwards as a rule; thirdly, by actual inflammation, such as inter-arytenoid laryngitis, due to purulent discharge falling into larynx, &c.; fourthly, by collection of mucus or discharge of one kind or another; fifthly, by acute inflammation due to cold, &c.

Let us now consider one or two of the common forms of disease as examples of what occurs.

One of the commonest and most far-reaching in its consequences (though insiduous in its onset) is hypertrophy of the mucous membrane covering the inferior turbinals, which produces partial or complete blocking of the air-spaces in the nose. At one time the nose is clear, and resonance good; within a few minutes this resonance is lost, and a dulness seems to have overspread the voice, due to this loss of tone in the mucous membrane. On another occasion (though at the moment the nose is clear) the voice is unreliable; almost certainly because the nose has been stopped up during sleep the night before, and this has produced congestion, if not inflammation, in the upper air-passages. A collection of mucus has occurred, and is difficult to clear away, and the resultant coughing has increased the congestion.

This train of symptoms goes on, and gradually increases, until the power of singing seems gone. After a very short time the voice tires, mucus collects, and perhaps cough is set up, and the singer soon ceases to use his voice, owing to uncertainty, and for fear that it will break suddenly.

The above may be taken to include such affections as adenoids, polypi, and accessory sinus empyemata, except that in the last the purulent discharge will rapidly produce irritation wherever it lodges in nose or throat.

Another common form is a simple sore throat, or acute pharyngitis, due to exposure or chill. Here the voice is lost, possibly, altogether, as far as singing is concerned, though the larynx looks normal, and the explanation to my mind is that the inflammation above causes inhibitory impulses to be sent to the muscles below, to prevent the muscular action, and so save strain on the affected part. A practical application of this is, that with a slight form of pharyngitis the application of a little cocaïn will enable the singer to carry out his engagement by preventing this inhibitory action, though he will probably suffer subsequently by having a worse throat as a result of this overstrain.

To this class belong acute laryngitis, rhinitis, &c., and they differ only in degree and in the length of time required to recuperate afterwards. Naturally, after actual laryngitis the larynx requires a more extended rest.

Again, how can one expect good resonance in a throat where two large, round masses (the tonsils) protrude from either side, and act mechanically by breaking up the air current, and also cause congestion due to the presence of chronic inflammation.

Many authorities in the singing world deprecate the removal of tonsils. Others maintain that their removal is always of benefit. While recommending the removal of enlarged tonsils, Moritz Schmidt does mention one case where the removal of a large pair of tonsils spoilt the resonance of a voice; but, surely, here the true explanation is that in this case the tonsils were not interfering with the resonance, and would have been better left alone; whereas, in the majority of cases with which we have to do, they are a direct hindrance.

These few examples will illustrate my meaning, and show the importance, from a singer's point of view, of clear and healthy air-passages.

I need hardly lay stress on the fact that the tongue must be under control. As a laryngoscopist, one can generally tell a singer by the easy way in which one can examine the posterior wall of the pharynx, without depressing the tongue, as he can perform that act voluntarily for one.

That the tongue should be usually depressed (to some extent, at least) is, I think, a fact; but it is of great importance to examine the hard palate first before a teacher corrects a pupil because their tongue is not flat enough.

The proper proportion between the arch of the tongue and the arch of the palate will help more towards resonance than forcing the tongue too far down in a case where the palate is more arched than normal. Naturally, it is here understood that the position of tongue, jaw, &c., alters with each vowel sound.

A soft palate is capable of being placed by the pupil voluntarily high or low, but instinctively it conforms to the sound produced.

A point not perhaps fully known by many is, that for a pure vowel sound the soft palate must be tight against the pharyngeal wall. The introduction of the least consonant sound into the note will spoil this effect; but if a true vowel is made the soft palate will be found to be in the position indicated. This points out that the nose is not used for pure vowel sounds, but is used for all consonant sounds; so we can at once appreciate that anything which alters the normal shape, either by widening or narrowing the lumen, such as a swollen mucous membrane or an atrophic membrane, will alter the power of the walls to respond to the vibrations.

A point less well known and understood is that the accessory sinuses partake in the vibrations.

The well-known case bears this out, where a singer, who had a tooth drawn which opened a small hole into the lower part of one antrum, and which at once produced a disagreeable change of resonance in his singing voice, had the resonance restored by a small plug of cotton-wool placed in the socket where the tooth had been.

So much has been written about hygiene in connection with singing that I do not propose to do more than to mention some of the heads, and shortly say that a singer, to produce a perfect note, must be just as much in training as one who undertakes any strenuous sport.

There are many rules laid down against various things, but it appears to me that we might shortly put it that a singer must lead a really healthy life, avoiding late hours, anything in his diet of an irritating nature, which would produce congestion of his throat, any atmosphere—especially a smoky one—which is hot and stuffy, which would naturally produce congestion of his nose and throat, and any undue exposure to sudden changes of temperature (especially after singing), which also tend to the congestion of the upper air-passages.

Nothing is harder on the voice than alternately singing and speaking. Any operatic singer will bear this out.

It almost seems superfluous to mention that it is a direct danger to the voice to use it strenuously during a cold, or any respiratory inflammation, or, indeed, to leave bad teeth in the mouth, or, in women, to work during menstruation.

All the above may be shortly summed up by saying that anything which produces congestion of the throat, be it inflammation in or around the throat, or any external influence which will bring about this result, will inevitably cause injury to the voice, and more particularly if the voice is used during the continuance of these various conditions.

In younger pupils a point which is sometimes neglected is that until the voice is trained, and the muscles accustomed to work, they should not sing for more than ten to fifteen minutes without a rest of a corresponding duration. Naturally, a fully-trained voice is capable of much more strenuous exertion, but many pupils do themselves much harm by too prolonged practice. Of course, no singing at all should be indulged in during the period when the voice is changing, or, as it is usually called, "breaking." This period varies considerably. From six months to three years may be put down as what is usual, and nothing but harm can result from an attempt to train the voice in this condition, for it is a well-recognised fact that during this period, when the larynx is rapidly growing, it is more or less congested, and it is an axiom that a congested larynx should have rest.

A point which I mention, with diffidence, is that one often hears of boys who are trained in choirs singing up to the age of about seventeen before their voice finally goes. It almost seems to me as if this delayed development must, in the end, be harmful, and result in the boy singer never developing a really good man's voice. Doubtless, there are exceptions to this rule, but I have known of some cases which bear out my point, and I have one under observation at present where the voice has not returned after five years' rest. It is one which it seems to me all choir-masters should combine to consider, for, if by stopping the boy a little earlier it would be more likely that his permanent voice would be improved thereby, surely it would be the right thing to do.

I wish here to quote a short list culled from Dr. Avellis' book, "Der Gesangsarzt," as I think it sums up shortly for us many of the well-known results of overstrain and misuse of the singing voice.

Faulty production or overstrain may result in any of the following conditions:—

(1) *Explosive Commencement.*—The singer can no longer begin with the hauchenden Stimmeinsatz, and is obliged to start with the festen Stimmeinsatz. This point was mentioned under the heading of breathing, and it will be remembered that if the pressure of the air is raised too high before the note is commenced, when the chords finally do separate, it will have caused a very great strain, and the act will partake of the nature of an explosion rather than of a mere sudden commencement.

(2) *Tremulous Voice.*—Again, probably due to mistake in the control of the muscles of respiration or to forcing the lower fuller register upwards.

(3) Inability of the voice to produce certain notes while the rest are produced normally.

(4) Quavering on a particular note, which persistently recurs at each attempt to sing that note.

(5) Loss of the upper notes.

(6) Loss of uniformity, or evenness, in the middle register.

(7) Difficulty of singing with half voice.

All these are results of much the same trouble—namely, overwork of some portion of the breathing or vocal apparatus, either too much air or too little air; too powerful contraction of the intrinsic muscles, too powerful stimuli to the extrinsic muscles, and so fixing the larynx in the neck unduly firmly, and causing a rapid tiring of the muscles; an improper position of the larynx for the particular note, forcing it too high or too low; or, finally, some pathological change, causing congestion, which, in its turn, obliges the singer to use more force than would be necessary under normal circumstances.

The most common are the quavering of the voice in men and the loss of the lower notes in the head register of women.

I have ventured to set down apart certain other mistakes which I feel should be laid to the door of the teacher and not visited on the head of the pupil, as, in these points, it behoves the teacher to instruct and to decide for the pupil:—

(1) Training a pupil to keep the larynx, tongue, &c., fixed in unsuitable positions. (This has been discussed above.)

(2) Training a voice in one of the usual divisions when it really should be in another.

This is more common than may be supposed, and, of course, I refer to cases which are not merely border-line cases, but where the pupil has to make undue effort to go up or go down to suit the wish of the teacher.

The naming of a voice—*i.e.*, saying whether it is base or baritone, &c.—often gives the best teachers of singing much anxious thought, and as the pupil may be able to actually sing the high or low notes, as the case may be, it is difficult to decide whether this is a right and proper effort, or whether the strain is too great. A reference to Fig. 12, page 71, of Moritz Schmidt's book mentioned below will give great assistance to the teacher in solving this knotty problem.

Here the laryngologist can often assist by looking at the chords after the pupil has used for some time the notes which are doubtful. If redness, or even a pink colour, is produced by the singing, the strain has been too great, and harm will result from its continuance.

(3) Training a pupil to change from one register to another register, at a note, or notes, which is not suitable to their voice. In other words, when a pupil is taught to take certain notes in one register which would be better produced by such a formation of the throat as would be used in one of the other registers.

This is entirely a question for a teacher to decide, but may be fraught with considerable trouble to the pupil if the division is not correct. I mention this as a cause of strain. The cure rests with the singing master.

(4) Allowing the pupil to take the beginning (Einsatz) as they like, without explaining to them the difference which I have mentioned above.

(5) Neglect of the breathing and exercises connected therewith. So much stress has been laid on this that it is now usually carefully attended to.

(6) Not recognising the breaking of the voice either at its commencement or allowing a pupil to commence too soon.

I am indebted to the following works and monographs, to which the reader will do well to refer for further information on a subject fraught with so much danger to those who have to earn their living by their voice, and who, in time of distress from overwork or disease, have to place their means of livelihood in our hands, and who have to depend on us to give them back their voice:—

(1) "Die Krankheiten der oberen Luftwege," Moritz Schmidt.

(2) "Der Gesangarzt," Dr. George Avellis.

(3) "A Method of Singing," Julius Stockhausen.

(4) "The Art of Expression in Song," by Stirling Mackinlay ("Strand Magazine," March, 1906).

I must also here express my thanks to Mr. Alfred Johnson for his help and counsel while writing these few remarks.

ART. III.—*The Treatment of Eustachian Deafness.* By ALBERT GRESSWELL, M.A., M.D. Oxon.; M.R.C.S.; and GEORGE GRESSWELL, M.A. Oxon.; L.R.C.P. Edin.

EUSTACHIAN DEAFNESS proceeds from a diseased condition of the Eustachian tubes, occasioned by influenza and other maladies. Mere dilatation by air of these Eustachian tubes, either by the use of the Valsalvan method, Politzer's bag, or the Eustachian catheter is a useful method in some cases. Much greater benefit can be gained by the use of a vaporised medicament in the place of air. A special instrument for this purpose has been made for us by Messrs. Downs; it will minutely vaporise almost any fluid requiring to be employed, and is used in the same way as the Politzer's bag. When Eustachian deafness follows a chill or attack of influenza, it is well to make use of a solution containing thymolin, boric acid, pure carbonate of sodium, and glycerine. This may be acted on by the vaporiser, and passed into the Eustachian tubes about four times at a sitting every other day. At first very little force must be used, and then gradually more may be added. If there be great dryness and irritability of the mucous membrane, a small amount of solution of nitrate of pilocarpin may be added to the solution; whilst if there be abundant catarrh, a little sulphate of atropin and suprarenalin may be substituted.

When there is such occlusion that no passage of air or vapour can at first be ensured, it is well to persevere with a fluid containing a larger amount of bicarbonate of sodium and a little eucaine for several days, and also to act upon the lining membrane of the mouth and throat with the ordinary vaporiser. Such perseverance is often very useful even in chronic cases of Eustachian deafness. The particular medicament employed must vary with the case; but with care and skill astonishing success can be gained.

In our hands the treatment has been highly beneficial.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Differential Diagnosis and Treatment of Disease. A Text-book for Practitioners and Advanced Students. By AUGUSTUS CAILLÉ, M.D.; Fellow of the New York Academy of Medicine, &c., &c. With 228 Illustrations in the Text. London: Sydney Appleton. 1906.

THE best part of this volume appears to us to be the introduction, in which the author discusses the position that the general practitioner, as distinct from the specialist, is destined to occupy in society. He concludes that under certain conditions there will still be a demand amongst the public for the services of a general medical man, and the principal condition that is laid down as requiring fulfilment is that the General Practitioner should know his work. With the object of enabling the above essential condition to be carried out satisfactorily, Dr. Caillé has compiled the present book, but whether it will succeed in that object or not is a matter of doubt. The book is a good one of its kind, but we cannot help wondering whether compilations of this sort, which include within the limits of a single volume the facts—we cannot say details—of dermatology, ophthalmology, general medicine, gynæcology, and many other specialties, are not more a hindrance than a help to the student of Medicine. To the practitioner who knows his work they certainly will not appeal, and the person who does not will gain from them a rather fragmentary collection of clinical data instead of the wider knowledge, based upon pathology, which he really requires in order to save him from empiricism. Having expressed this opinion with reference to this type of book in general, we may again repeat that Dr. Caillé's work is a good one of its class. It has evidently been revised with care, and is both complete, in a limited sense, and accurate. The author more than once animadverts against the indiscriminate drug prescribing which is so much practised, but we notice that he does not fail himself to introduce a considerable number of prescriptions into his pages. These are, however, few in number when compared with the accounts of physical therapy that are given, and we need hardly regard them as being in actual opposition to the principles that he appears to desire to inculcate. The accounts of the various diseases and conditions which he describes are necessarily brief, as are also, indeed, the descriptions of diagnostic technique, and, as far as the former are concerned, we think that sufficient attention is not paid to differential diagnosis, despite the title of the book.

The illustrations are excellent, and most of them highly artistic. We would particularly call attention to those which depict the application of various methods of treatment. They should prove of value to those practitioners who are anxious to adopt the most modern therapeutical technique, but who are deterred from doing so by the difficulty of acquiring from a mere written description a working knowledge of procedures such as lumbar puncture and the like.

Notes on General Practice. By S. M. HEBBLETHWAITE, M.D. Lond., &c. London: The Scientific Press, Ltd. 1905. 8vo. Pp. viii+78.

THE pages of this comparatively unpretentious booklet contain a very great deal indeed of excellent clinical information, which will well repay the perusal especially of junior practitioners. The text is arranged in five chapters — I. Peritoneal Catastrophes; II. Medical Notes; III. Surgical Notes; IV. Notes on Infants and Children; and V. Obstetrical Notes. The author is judiciously careful to indicate the special importance of the symptoms which in our own student days used to be generally spoken of as "pathognomonic" an arrangement which is not, so far as we know, sufficiently noticed in any of the current manuals of medicine or surgery. As he truly says: "It is less important to him [*i.e.*, the newly qualified student] to know how to ligature the subclavian artery than how to feed an infant; he has, perhaps, spent more time in learning the former; he could enumerate the symptoms of perforative peritonitis, but does he realise which of these symptoms colour the picture, and could he diagnose a case on his own responsibility?" This quotation furnishes the key to the volume now before us, which we cordially comment to the notice of the newly-fledged candidate for success in general practice.

A Manual of Diseases of Children. By JAMES BURNET, M.A., M.R.C.P., M.B.; Registrar and Assistant to the Extra Physicians, Royal Hospital for Sick Children, Edinburgh; Medical Tutor Extra Mural Wards, Royal Infirmary; and Physician to the Marshall Street Dispensary, Edinburgh. E. & S. Livingstone. 1905. Pp. 400.

THIS small volume by Dr. Burnet is attractively published, with good print and a simple arrangement of material. It is, however, very elementary, and aims at merely giving an outline of the chief diseases met with amongst children For junior students it will be helpful in their first visits to the children's ward. As a reference book for special knowledge on this branch of medicine it can scarcely, in its present form, compete with those finer works of greater depth, or range, of which we have some good examples in our language. The author has specially omitted all reference to morbid anatomy, which is to be regretted, since a sound pathology is the surest guide to rational treatment.

There is a useful chapter on the examination of children. In his chapter on the respiratory organs we think some of the therapeutics are old-fashioned and need revision. There are good chapters on the digestive, urinary, and nervous systems, with interesting illustrations, but the whole subject is so condensed that many chapters and paragraphs are imperfect.

A Manual of the Diseases of Infants and Children. By John Ruhräh, Clinical Professor of Diseases of Children of the College of Physicians and Surgeons, Baltimore. Philadelphia: W. B. Saunders. 1905. Pp. 404.

Professor Ruhräh's little volume is a very comprehensive book, and contains some excellent accounts of these peculiar diseases. It is almost telegraphic in character from the necessarily abridged descriptions he gives. Every disease is separately described under the several headings of Ætiology, Symptoms, Diagnosis, Prognosis, Pathology, and Treatment. In a small work condensation is essential, and it is well done on the whole. The print is clear, and information is easily gained. There are some very good illustrations, many of which are original, and where borrowed they are gratefully acknowledged. His material is distinctly sound, and the advice given is sometimes very suggestive and marked with careful thought. We recommend the book to any who desire a brief compendium or practical handbook on diseases of children which is easy for reference and sound in principle. It is essentially intended for ready reference for students, but is not a volume to give the physician great pleasure in reading deeply about any one disease. Dr. Ruhräh, whose interest in this subject is well known, has at least formed the skeleton of what may in a future edition become a very useful book.

The Child's Diet. By J. Sadler Curgenven, M.R.C.S., L.R.C.P. H. K. Lewis. 1905.

This is a small handbook embodying the author's personal experience of twenty years' general practice compiled for the use of his own patients. It contains some useful general directions on the feeding of infants and young children which may be safely followed. We do not approve, however, chapters on digestive diseases and their treatment being incorporated in works of this kind for lay readers. These pamphlets are most mischievous, and if for general circulation such paragraphs should be eliminated. The author should know the danger of semi-scientific books for public use especially where the science is questionable. They are, in fact, unsuitable for the public and almost useless to the profession unless very carefully thought out.

A Vocabulary of Malay Medical Terms. By P. N. GERRARD, M.A., B.Ch., B.A.O., M.D., Dub. Univ.; D.P.H. Univ. Cantab.; L. M. and Special Certificate Rotunda Hosp., Dublin; Foreign Corresponding Member, Dub. Univ. Appointments Association; Member of the Authors' Society, London; Diplomate (with distinction) of the London School of Tropical Medicine; District Surgeon, F. M. S. Medical Service. Printed with the Assistance of the Federated Malay States Government. Singapore: Kelly & Walsh, Ltd. 1905.

As the sun of civilisation (as well as of revelation) of the western segment of this hemisphere, to which the historically distinctive name of "Old World" is still occasionally applied, originally arose in "Ur of the Chaldees," and has since passed westward in a course sometimes spasmodically swift, sometimes very irregularly jerky, sometimes oscillatory, and sometimes even with negative (that is, temporarily retrograde) progress, after being long arrested in its course by the unsurmountable obstacle of the Atlantic Ocean, at length jumped the latter barrier, and cleaved and roasted its ruthless way across the great Occidental Continent, and after another few centuries of Pacific retardation, has finally bounced the latter obstruction, and completed its electric circum-mundane circuit by securing a broad basis of contact on the eastern margin of that immense ocean territory, the whole civilised world may now be held—with better reason than at any previous period in the history of humanity—to be practically members of one great brotherhood, whose individual units will probably, at no very remote era, speak the same language, worship at the same altar, and live their individual lives after the same general customs. Such is the complicated chain of associated ideas—expressed, as they are, in rather complicated form—which a glance at Dr. Gerrard's little volume has called into the visual field of our imagination. Its existence is a distinct item of evidence of the formation of a well-established bond of intellectual sympathy, and of practical applicability, between the Caucasian and Mongolian races—so long separated in time, and so widely in space. This little vocabulary contains an excellent selection of the medical terms in most frequent use; and, while congratulating the author on the neatness and good taste which he has displayed in its compilation, we express a hearty wish that the conditions which induced him to undertake the task may develop and expand in all directions. We are delighted to note that the author of this premier Anglo-Malayan vocabulary is a distinguished graduate of our own Dublin University. We shall eagerly look forward to the perusal of more of his work.

On Means for the Prolongation of Life. Second and enlarged Edition of a Lecture delivered before the Royal College of Physicians, on December 3rd, 1903. By Sir Hermann Weber, M.D., F.R.C.P.; Consulting Physician to the German Hospital, the National Hospital for Consumption, Ventnor, and the Mount Vernon Hospital for Consumption. London: John Bale, Sons, & Danielsson, Ltd. 1906. 8vo. Pp. 104.

It is superfluous to point out that the subject of this volume is one of exceptional interest; for it is well known, even to the most ignorant laymen, that the problem which it involves is one which has successfully focused the attention of scientist and empiricist, of theologian and mystic, of ignorant as well as wise, of bond as well as of free—ever since the pre-historic period in which fallen humanity began to dream of partial emancipation from the penal consequences of mastication of that forbidden apple. It is almost unnecessary to assure those of our readers who know anything of Sir Hermann Weber's professional record that he deals with his subject wisely, skilfully, philosophically, and well, and gives the most sensible and practicable advice and suggestion; not, as less judicious counsellors have done before now, "to prolong life, merely for living long; but to prolong mental and bodily energy, and this with a measure of enjoyment and usefulness, and without bodily suffering." He has brought to bear on the illumination of his subject the concentrated search-light wisdom of past ages of philosophic and (primitive) medical speculation regarding the possibility and desirability of the "prolongation of life," and has placed his laboriously "gained knowledge" at the disposal of all who read—in the choicest diction and most lucid style. He very properly adopts the results of the investigation of Mr. W. Thom, which have gone to show that "the generally accepted great ages of Henry Jenkins, Thomas Parr, and the Countess of Desmond, are . . . to some degree mythical." The items of counsel suggested by the author in the pages of this little volume are far too numerous, and too complex in their many-facetted aspects, to receive individual attention at the hands of a critical reviewer; so that it would be nothing less than vain pretence to undertake to do them justice within our prescribed limits. We will, accordingly, endeavour to content ourselves—although very unwillingly—by recommending our readers to read, mark, learn, and inwardly digest each for him-(or her-) self the contents of a booklet which have given us unusual pleasure as well as instruction.

Reports of the Society for the Study of Disease in Children. Vol. V. 1905. Edited by GEORGE CARPENTER, M.D. London: J. & A. Churchill.

THE fifth volume of these Transactions is fully up to the mark of its predecessor. In print, binding, paper, and illustrations there is nothing to be desired, and they form a series of bright, cheerful volumes. The material embodied herein is admirably reported. The notes of the cases exhibited are clear, and have been condensed with care. A very special feature in this volume is a fully-reported discussion on sudden and unexpected death in children. This has been admirably dealt with, and forms the most reliable description of this calamity in English literature. The volume comprises 99 different communications covering all branches of medicine and surgery as met with in children. There is a capital index by which reference to any subject can easily be made.

Dr. Carpenter and the hon. secretaries are to be congratulated on the marked success of these reports. We know of none such volumes which are so clearly and satisfactorily edited. They should be in all medical libraries.

The Nursing of Sick Children. By JAMES BURNET, M.A., M.D., M.R.C.P. Ed.; Clinical Tutor, Royal Infirmary, Edinburgh, and Assistant to the Extra Physicians, Royal Hospital for Sick Children, Edinburgh. London: Scientific Press.

THIS is a practical manual for nurses, and is in many ways a good introduction to the subject. Sound directions are given about temperatures, respiration, pulse, and feeding in a very elementary manner. In some points Dr. Burnet orders baths at higher temperatures than is usual—105° F. for a child's ordinary warm bath is certainly excessive, whereas 90° F. to 95° F. would be much safer, pleasanter, and more useful. There seems a tendency to disregard heat in other ways. For instance, in speaking of the examination of sick children he says:—"As the examination is conducted before a fire, the nurse should see that the patient's body intervenes between the physician and the fireplace, otherwise the former will have his face scorched during the process." The author evidently prefers to scorch the child! It is questionable whether nurses should pass nasal feeding tubes, as is recommended, without skilled instruction and practice. Again, we notice orders to maintain a temperature of 70° F. in sick rooms, which, in our experience, is surely mischievous. Nevertheless, Dr. Burnet's advice in food disorders and nervous cases is wholesome and sound, and contains very useful information.

A Handbook of Climatic Treatment, including Balneology. By WILLIAM R. HUGGARD, M.A., M.D.; F.R.C.P. Lond.; H. B. M. Consul at Davos, Switzerland. London: Macmillan & Co., Ltd. 1906. Pp. 536.

WE congratulate Dr. Huggard on the production of this handsome volume, which must have entailed a great deal of labour and research in its compilation. The author's well-known connection with Davos and his close acquaintance with the climatic conditions of the higher Alpine stations render him peculiarly qualified to speak with authority on the therapeutic potentialities of these regions. In a volume of over 500 pages, interspersed with many charts and tables, he deals with the general principles of meteorology, of the physiology of climate, and with the special details of selected health resorts all over the world. The latter portion of the work will, we think, be of most interest and use to the general reader, who will find in it a convenient book of reference in regard to the particular stations enumerated.

We believe that Dr. Huggard is an Irishman, but we find with regret that he almost altogether ignores the health resorts of Ireland, and that there is practically no reference in the book to the large amount of valuable meteorological work which has been accomplished in this country within recent years. We think that this is particularly unfortunate in a work which is so comprehensive, and in which so many authorities from different parts of the globe are cited.

A volume in which so many names appear is especially liable to typographical errors, and the large number of "errata" issued by the publishers prove that in the work before us many mistakes have slipped in. These will doubtless be corrected in future issues of the book, which should prove of real value to all who seek information on climatology and balneology.

Pediatrics. A Manual for Students and Practitioners. The Medical Epitome Series. By Henry E. Tuley, A.B., M.D.; Professor of Obstetrics, Kentucky University, &c. Printed in America. London: Hodder & Stoughton.

No book is so difficult to write as an epitome or condensed treatise. We can hardly congratulate the author on his attempt. Some students may find a few interesting paragraphs on these diseases, but there is little to attract the practitioner, and nothing for him who looks for any depth of knowledge. It seems a pamphlet which American students might use for cramming before an examination. Compiled from current literature and devoid of any original work, we cannot recommend such volumes to our readers. We have excellent English works of this nature, such as Dr. Carpenter's small volume, but here original work and sound knowledge have enhanced the value of an excellent pocket guide. The volume before us, however, can hardly take high rank in English medical literature.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. I. Aachen to Brain. Edinburgh and London: William Green & Sons. 1906.

Three years have elapsed since the completion of the *Encyclopædia Medica*, published by the firm of William Green & Sons, and so well edited by Dr. Chalmers Watson. A supplement to that great work has been promised, and it is intended to issue it as a *Quinquennium of Medicine and Surgery* in 1908.

Notwithstanding this intention, the enterprising firm just named have already published the first volume of an "Encyclopædia and Dictionary of Medicine and Surgery."

This great work will comprise ten large volumes, and will contain over 10,000 separate articles by 400 writers. It is to be a dictionary as well as an encyclopædia—that is to say, the work is not only to include the elaborate articles on medical and surgical subjects which were published in the volumes of the *Encyclopædia Medica* as they successively appeared during the years 1899 to 1903 inclusive, but is also to furnish an alphabetical index of words used in medicine and surgery, with concise and clear definitions of the same. On this principle the thousands of smaller subjects and technical terms dealt with will be treated shortly—a simple statement and explanation being given under each, along with a reference to the main heading in which it is dealt with fully by a "specialist." At the same time the work will serve as a System of Medicine and Surgery by reason of its articles (in some instances reaching the dignity of monographs) on medical and surgical diseases, physiology, pathology, gynæcology, materia medica, diseases of children, and many other subjects.

A curious thing about this new work is that the editor's name does not appear on the title-page. As the "Introduction" is, however, signed "J. W. Ballantyne," we presume the editor is the distinguished physician to the Royal Maternity Hospital, Edinburgh, and editor of the *Transactions of the Edinburgh Obstetrical Society*. We are confirmed in this surmise by the following sentence in the "Introduction":—"In this volume the Editor has made himself responsible for the whole of the dictionarial as distinguished from the encyclopedic material; has written most of the articles of less than thirty lines in length; and has added the new matter within square brackets."

To show how the work is to be used we quote another sentence from the editor's introduction:—"Under the heading ALCOHOL, the practitioner who consults the *Encyclopedia-Dictionary* will find not only a long article upon the chemical, physiological, pathological, and toxicological effects of that substance, but also a group of illuminating cross-references to *Antipyretics; Aseptic*

Treatment; Breath; Colour Vision (Acquired Colour Blindness); Epilepsy; Heart, General Pathology; Insanity, Etiology of; Liver, Diseases of; Liver, Acute Hepatitis; Nephritis; Nerves, Neuritis; Temperature; Tetany; Toxicology (Organic Poisons); &c."

Looking at the work from its "dictionarial" side (as the editor would say) we observe that no attempt is made, save in a few instances, to supply the etymology or derivations of the many technical terms which find a place in successive pages. This omission, of course, saves space, but detracts from the scientific value of the work. In many instances, also, terms are mentioned without any explanation, or even the shortest definition, and the inquirer is curtly referred to a number of cross-references which are not always easy of access. For example, the term "atheroma" is entered at page 319 thus:—"ATHEROMA. *See* Arteries, Diseases of; Aneurysm (*Etiology*); Brain, Affections of Blood Vessels; Tinnitus Aurium." It is true that the editor makes this a feature for approval, since he writes in his introduction as follows:—"In some instances it has been found possible to dispense with the definition of a word, the cross-reference sufficing to suggest its meaning. Thus Aglaukopsia is not defined; the reader is referred to *Colour Vision* (*Green Blindness*), which is quite sufficient. Under Agaricus, again, there is no definition, but simply the cross-reference to *Toxicology* (*Fungi*) which can hardly fail to indicate what is wanted. In this way space is economised, and the work, as a Dictionary, has its value increased." This opinion is open to question: certainly we are not prepared to endorse it without reservation.

The volume opens with lists of the chief articles, with their authors, and of the illustrations, which are numerous and of a high standard of excellence in most instances. Among the authors' names are those of the late Dr. D. J. Leech and the late Mr. R. Glasgow Patteson. Surely the fact of their decease should have been mentioned. This was done in the case of the late much-lamented Dr. A. Lockhart Gillespie, to whose gifted pen we owe a splendid article on "Alkaloids."

This first volume carries the reader from "Aachen" to "Brain." The first entry simply refers the inquirer to "Balneology (Germany)"; the last entry is in reality a definition of the term "Braxy," but to "Brain" seventy-two pages of the volume are very properly devoted—separate articles being contributed on the physiology of the brain by Dr. Alexander Bruce; affections of its blood-vessels, by Dr. James Taylor; cerebral tumours and the cerebellum, by Dr. J. Risien Russell; atrophy of the brain, by Dr. R. A. Fleming; and brain surgery, by Mr. J. M. Cotteril, M.B., F.R.C.S.E.

The general impression left upon us by a study of this instalment of Green's Encyclopædia is favourable. The size of the volume is convenient, and its contents are well arranged and reliable. Paper, letterpress, and binding leave nothing to be desired. The title-page in particular is highly artistic, though we must admit that the spelling "Encyclopedia" grates upon our orthographical sense-organ.

Die Krankheiten des Verdauungs-Kanals (*the Diseases of the Alimentary Tract* (*Œsophagus, Stomach, Intestine*) *: a Text-Book for Physicians*). By DR. PAUL COHNHEIM. Berlin: S. Karger. 1905. Pp. 247.

THIS is a useful and valuable work. It differs a good deal from most English works on the same subject, and hence will be found suggestive and novel. It is written throughout in a clear and practical manner—matters of theoretical interest are but lightly touched on, while much space is devoted to those subjects which are of importance in the actual work of a physician. A striking feature is the very great part which the examination of the stomach contents, obtained by the use of the stomach-tube after a test meal, plays in the diagnosis of stomach diseases. Dr. Cohnheim states that the diagnosis of chronic gastritis cannot be settled without such examination. It is remarkable that he nowhere regards this examination as being in any way unpleasant for the patient, while he states that the method of determining the size of the stomach by administering first an acid and then a bicarbonate is "remarkably nasty."

We note that the author divides the treatment of gastric ulcers into three periods—(1) Period of healing (six weeks); rest and salines; (2) a course of Carlsbad or Vichy water for six weeks, or iron if chlorosis exists; (3) prophylactic treatment for three months, during which the patient takes "almond-milk" or a tablespoonful of olive oil three times a day before meals. ("Almond-milk" is prepared by making a tablespoonful of finely-powdered sweet almonds into an emulsion with half a pint of hot water; this is taken warm—100° F.). Dr. Cohnheim says this after-treatment diminishes the tendency to relapse.

In estimating the position of the lower border of the stomach he recommends the following method:—The patient, lying on a couch with the thorax somewhat raised, drinks $\frac{1}{2}$-$\frac{3}{4}$ pint of water; then the doctor places his fingers on the umbelical region of the patient, and makes a sudden push; he repeats this every half inch, passing in an upward direction, until the water is felt striking against the finger.

We have picked out only a few passages that caught our attention, but the book is valuable and suggestive in every part, and might, through its clear and concise style, serve as a model as to how a medical work should be written.

Die palpablen Gebilde (*The Palpable Structures of the Normal Human Body, and their Methodical Palpation*). By Dr. T. Cohn, Specialist in Nervous Diseases, Berlin. First Part: Upper Extremity. With 21 Figures. Berlin: S. Karger. 1905. Pp. 216.

Dr. Cohn has found in the course of many years' experience of massage that the chief difficulty in appreciating abnormal conditions which may be felt by the operator consists in the fact that few, if indeed any, of those who practise the art have ever really learned what the normal structures of the body feel like.

The work before us is intended to supply an accurate and full description of all that can be felt in the human body. Dr. Cohn has spared himself no pains to make the work really complete. This can be seen from the fact that this volume, consisting of 216 pages, is altogether devoted to the palpation of the upper extremity. The work is illustrated by a number of very clear reproductions of photographs.

We can recommend this book to all who desire a thorough and scientific work on the palpation of the upper extremity.

Reports of the Commission appointed by the Admiralty, the War Office, and the Civil Government of Malta for the Investigation of Mediterranean Fever, under the Supervision of an Advisory Committee of the Royal Society. Part IV. London: Harrison & Sons. 1906.

THIS publication contains fourteen short papers, mostly by members of the Army and Navy Medical Services, in continuation of those previously issued and reviewed in the DUBLIN JOURNAL OF MEDICAL SCIENCE. The results are interesting and valuable contributions to the epidemiology of Malta fever, and as they have been achieved by irreproachably up-to-date methods criticism is not called for, and all we need do is to quote a few of the more generally important. For brevity's sake we shall call the Micrococcus melitensis by its initials M. M. and the disease it causes M. F. [Malta Fever].

In the first paper Staff-Surgeon Gilmour shows that the M. M. can exist in dry *sterile* garden soil for at least sixty days [in a later paper Major Horrocks shows that it survived for twenty days in *unsterilised* manured garden soil], in sterile tap-water for at least forty-two days, in sterile sea-water for at least thirteen days.

In the second paper Staff-Surgeon Shaw proves the existence of ambulatory cases of M. F., that their urine may contain the M. M., and may be a source of infection for monkeys and goats.

In the third paper the same worker shows that the M. M. may persist in the blood of a living goat for seven months [warning to those who prepare an anti-serum!]; that out of 91 goats in full milk 30 were at some time or other infected with the M. M., and of these at least 9 yielded it in their milk in a condition capable of producing infection; also, that of 33 *cows* 10 had become infected, and 2 had the M. M. in their milk.

In the sixth paper Major Horrocks and Captain Kennedy show that 41 per cent. of the goats in Malta are infected, and that 10 per cent. of those yielding milk yield the M. M. in their milk; that monkeys and goats can be infected by feeding on such milk, and that the incubation period in feeding experiments appears to vary between three and four weeks [up to two months in the case of man]. Pasteurisation at 68° C. for 10 minutes destroys the infectivity of the milk. The goats may become infected by feeding on dust polluted with urine from cases of M. F.

In the seventh paper Major Horrocks and Captain Kennedy show that mosquitos (*Culex pipiens* and *Stegomyia fasciata*) act as carriers of the M. M., and a case they observed renders it extremely probable that human beings are infected by the bites of infected mosquitos. The case referred to is of much interest. On October 1 a monkey infected by feeding was being examined by Major Horrocks in the veranda of the Lazaretto, when Carlo Mifsad, the attendant, pointing to a mosquito full of blood resting on the table, said—"That mosquito has just bitten me, and I could not brush it away without letting go the monkey." The mosquito was at once captured and dissected, and the M. M. was found in it (photo of plate-culture given). The boy was well at the time, and his blood gave no agglutination reaction with the M. M. On October 11 he fell ill. On October 18 he had fever, and his blood caused immediate agglutination of the M. M. This event was, to say the least, a curious coincidence, but when it is borne in mind that the boy had been drinking the milk of healthy goats that were being kept under observation for future experiments, and that the mosquito had the opportunity of getting infected by biting the laboratory monkeys, it would seem to be something more. Should further observations substantiate the supposition we have here a new and important addition to the list of diseases propagated by blood-sucking invertebrate parasites.

The various authorities mentioned in the title of this collection are to be congratulated on the methodical work, fruitful in results, that is being conducted under their auspices.

Essentials of Bacteriology. By M. V. Ball, M.D. Fifth Edition, thoroughly revised by Karl M. Vogel. M.D. [Kimpton's Essential Series.] London. 1906.

This is an American cram-book, and a bad specimen of its kind—revulsive in style and bristling with small but irritating errors in the spelling of proper names. We see *Franckland, Francland, Shütz, Babe,* and so on *ad nauseam,* whilst barbarisms like "this cocci-like bacillus" abound. These minor faults might be condoned were they committed in the act of conveying a precise and up-to-date presentment of the subject-matter. But this is far from being the case. Much of the information is incomplete, many of the methods are obsolete, many of the figures are ill-selected or useless; and this remark applies more especially to such as (in the absence of indicated source) we must suppose to be original (*e.g.*, Fig. 79, page 143). Some of the copied ones are so truncated and deformed as to be unrecognisable (*e.g.*, Fig. 90). As an example of the presentation of obsolete methods we may cite the account of the "Nivellier Leveling and Cooling Apparatus," on page 60, where the first word, evidently mistaken by the author for a proper name (that of the inventor), is obviously the German for the second word, which should, of course, be spelled "levelling"! One might expect an editor named *Karl Vogel* to know better than to let this blunder stand in the fifth edition! Again, in a book dated 1906 one might expect to find some mention of Schaudinn's Syphilis Spirochæte, but there is none. This omission might be excused on the ground that the subject is too recent or still *sub judice.* But what is one to say of a book that, in dealing with typhoid, fails to mention the Drigalski medium—though giving the obsolete ones of Elsner and Hiss? Further review seems mere waste of time, and we will conclude by quoting textually the following passage which gives a better idea than any description of the rubbish offered to the reader in this book of "Essentials." The notes of exclamation are ours:—

"*In Water.* Bacilli have been found which also resemble typhoid bacilli, and one must be very careful not to make any positive statement (!).

"*Examination of Water for Typhoid Bacilli.*—When a water is supposed to contain typhoid bacilli, 500 c.cm. of the same is mixed with 20 gtt. of ¼ per cent. carbolic acid, which destroys many of the saprophytes (!!).

"Plates are then made as described under Water Analysis.

"Those colonies which then form and have a tendency to liquefy, are touched on second day with permanganate of potassium, and when so colored, destroyed with bichloride of mercury.

"Those that now develop are transferred by inoculation to fresh plates. At the end of eight days they are examined under microscope; every colony not possessing motile bacilli is discarded. The motile bacilli are tested with Gram's method of staining; those that do not take the stain are alone retained. Cultures are made from these upon potatoes, and, if the characteristic growth occurs, then only can they be called typhoid bacilli with any certainty" (!!!).

The Royal University of Ireland. The Calendar for the Year 1906. Dublin: Alex. Thom & Co. 1906. 8vo. Pp. 535.

CERTAIN changes in the courses of botany and zoology for the First Examination in Medicine for 1907 are mentioned at page 234. It is announced that at each of the two examinations in the year for the degrees of M.B., B.Ch., and B.A.O., the Senate may award three exhibitions of £21 each in the groups of Medicine, Surgery, and Midwifery, as the Senate may from time to time determine. No candidate will be eligible for any of these exhibitions at any examination subsequent to that next held after an interval of five academical years from the time of passing the First Examination in Medicine.

In October, 1907, one Medical Studentship, tenable for two consecutive years, of the annual value of £200, will be offered for competition among the graduates in medicine of the University. The subjects of examination will be physiology and physiological chemistry; and a practical examination will be held in physiological chemistry and in experimental physiology. Printed forms of application for admission to this examination may be had from the secretaries of the University.

RECENT WORKS ON SURGERY.

1. *Appendicitis: its Pathology and Surgery.* By CHARLES BARRETT LOCKWOOD, F.R.C.S.; Surgeon to St. Bartholomew's Hospital, &c. Second Edition. London: Macmillan & Co., Ltd. 1906. Pp. 342.

2. *Transactions of the American Surgical Association.* Volume XXIII. Edited by RICHARD H. HARTE, M.D., Recorder of the Association. Philadelphia: Wm. J. Dornan. 1905. Pp. 392.

3. *Course of Instruction in Operative Surgery in the University of Manchester.* By WILLIAM THORBURN, B.Sc. (Lond.), F.R.C.S.; Lecturer in Operative Surgery. Manchester: At the University Press. 1906. Pp. 75.

4. *Aids to Surgical Diagnosis.* By H. W. CARSON, F.R.C.S.; Surgeon to Tottenham Hospital. London: Baillière, Tindall & Cox. 1906. Pp. 140.

1. SOME five years have elapsed since the appearance of the first edition of Mr. Lockwood's monograph. The arrangement

adopted was such as to show, as far as possible, the connection between the clinical manifestations and the pathological changes found in the appendix, with the praiseworthy object of arriving at a method of determining, in any given case, the exact nature of the pathological conditions by an interpretation of the clinical phenomena present. A description of the clinical history is given, followed by an account of the morbid anatomy and microscopical pathological changes. Mr. Lockwood then comments upon the conditions. In the former edition some 83 cases were thus dealt with, while in the edition before us now 112 cases are made use of. These cases, we take it, were selected from 200 cases observed by the author himself, and are, therefore, of considerable practical value. That the author has done much to elucidate the difficulty of diagnosticating the exact pathological state of the appendix by a careful study of the clinical conditions presented by the patient no one will deny, but much more yet remains to be done before definite conclusions can be arrived at; and until conclusions can be accurately drawn as to what is actually happening within and about the appendix, the question of treatment must remain, as it at present does, one which each surgeon must determine and decide, not by any given rule, but by a consideration of the conditions before him plus his previous personal experience. This being the case, and the judgment of individual surgeons differing as much, if not more, than their operative ability, it is questionable whether the American procedure of operating upon every case of appendicitis as soon as possible after the diagnosis has been made is not the procedure which, after all, will be attended with the least mortality. The author discusses the question as to whether in cases of appendicitis, associated with abscess or general septic peritonitis, the appendix should not always be sought for and removed. In the latter condition, in which the general peritoneal cavity is already infected, we are unquestionably of opinion that the appendix should be removed at the time the abdominal cavity is being washed out, but we doubt very much the propriety of searching for and removing the appendix in all cases in which a localised abscess exists—a procedure very strongly advocated by Deaver, whose experience of appendicitis is so extensive. Mr. Lockwood rather favours the removal of the appendix in all abscess cases provided the strength of the patient is equal to it. Many cases, no doubt, will have a recurrence of the trouble if the appendix is not removed, and some of these cases may rapidly develop general peritonitis, the previous attack, even though associated with localised abscess which has been drained, having left no adhesions to protect the general peritoneal cavity; still the knowledge of these facts should not make us hastily conclude that it is safer to remove the appendix when the abscess is found than leave it. The reviewer has had occasion to operate three times on a gentleman for appendicitis within a period of ten months. On the first and second occasions abscesses were encountered, well limited by adhesions, and the appendix could not be seen unless the adhesions had been separated. The abscess was washed out and the cavity loosely packed with gauze on each occasion, the wound healing up in about three weeks. Some three months after the second abscess had healed symptoms of appendicitis again arose, and within four hours of the onset of the first symptom the abdomen was opened, and the appendix, containing a date-stone like secretion occupying a position in the appendix close to its attachment to the cæcum, was found without any adhesions, and easily removed. The adhesions one would have expected to have encountered after the two previous attacks had entirely disappeared. In our opinion, however, the appendix should be removed at the time an appendix abscess is opened only when it presents at once, or can be seen and removed without separating many adhesions. Under other circumstances we think it safer in every respect to simply evacuate the abscess at the time, and remove the appendix at a later date. The mortality of the "complete" operation will, we think, far exceed the immediate mortality of the so-called "incomplete" operation plus that arising from subsequent attacks leading to gangrene or general septic peritonitis. We heartily congratulate the author on the excellence of his work, and strongly recommend the book for careful study to every practitioner.

2. The twenty-third volume of the Transactions of the American Surgical Association contains some twenty-two papers and the President's address. Six papers are devoted to surgical affections of the spine, and, taken in themselves, form what might be termed a treatise on the subject.

The other papers deal, for the most part, with miscellaneous subjects, the majority referring to intra-abdominal conditions. Many of these papers have appeared in the "Annals of Surgery" or other American Journals during the past year, and will be well known to our readers. To one of these papers we would direct particular attention—namely, that of Roswell Park, entitled "The Status Lymphaticus," in which surgeons will find much food for reflection. The condition is one which our readers may comprehend better when we state that it is more frequently described in medical text-books under the term "Lymphatism." Hitherto it has not received the attention from surgeons its importance demands, not that much, if indeed anything, could be done for the condition itself, but its recognition would play a very important part in deciding the question for or against operative interference in a given case.

Elliott's paper on "The Management of certain critical cases of Intestinal Obstruction" is one well worthy of the surgeon's attention. In many respects, particularly in the first section of it, devoted to "Resection for Cancerous Obstruction," much information of an eminently practical nature will be found.

In the paper by Richardson and Palfry, on "Intussusception," it is surprising to find the statement that "intussusception is a very unusual disease—no one man can see much of it." Any general surgeon attached to a large hospital in this country sees many cases of intussusception in the course of his experience. There are, however, surgeons to be found who say they do not see these cases, but, from our experience, we are inclined to think they do not see them because they do not, or cannot, recognise them. There is no commoner cause of intestinal obstruction, if we except strangulated hernia, than the condition under discussion. With the author's conclusions as regards treatment, we entirely disagree. The best results, we unhesitatingly affirm, will be attained in the treatment of intussusception by immediate operation performed by a competent surgeon—not one who potters about trusting to luck to get him out of a difficulty, and who necessarily wastes time by so doing—but by one who knows what to do, how to do it, and does it in the shortest possible time.

Excepting this paper, the practical nature of the papers, of which this volume of "Transactions of the American Surgical Association" is composed, well maintains the high standard which the perusal of the previous volumes has led us to expect.

3. MR. THORBURN'S small book is one of a series (Medical Series No. 4) of the publications of the University of Manchester.

With some of the statements made in the introduction regarding the objects to be attained by a course of operative surgery upon the cadaver we are in accord with the author's views, but whether the object of the author—viz., that of expediting the work of the class room—will be attained by the production of the present work is, we think, open to question. For our own part we think not. If these notes cannot, and are not intended to, replace the careful study of at least one good text-book of operative surgery, of which there are many available and within easy access of every student, then what good object can be attained by their perusal? The author tells us the illustrations were added as an afterthought. Had they been left out altogether we do not think it would have mattered very much. We regret we cannot recommend the student to invest even 2s. 6d. upon the book.

4. MR. CARSON'S manual is "intended for the use of students and practitioners who may desire to obtain, in a small compass, the main points in the diagnosis and differential diagnosis of the more common surgical diseases." So far as the book goes it seems good enough, but we must say we have little or no sympathy with what we may term pandering to the laziness of students or of practitioners. A good sound knowledge of one's work is, or ought to be, essential in either student or practitioner, and especially in the case of the latter. This being so, the production of a book of this nature

is, in our opinion, unnecessary and uncalled for. It can but conduce to laziness and carelessness, and as such we cannot recommend it.

Heart Disease and Aneurysm of the Aorta. By SIR WILLIAM H. BROADBENT, Bart., K.C.V.O., M.D. Lond., F.R.S., D.Sc. Leeds, LL.D. Edin. and St. Andrews, F.R.C.P., Physician in Ordinary to H. M. the King and to H.R.H. the Prince of Wales; and JOHN F. H. BROADBENT, M.A., M.D. (Oxon.), F.R.C.P., Physician to Out-patients, St. Mary's Hospital, &c. Fourth Edition. London: Baillière, Tindall & Cox. 1906. Demy 8vo. Pp. xvi + 479.

THE reviewer's task is easy in regard to a work which has reached its fourth edition, and which has been well spoken of from its first appearance. Such is the position of Sir William Broadbent's work on "Heart Disease." Our readers will remember that the distinguished author associated his son, Dr. John Broadbent, with himself in the task of revising and enlarging the third edition of the work, which was published towards the close of the year 1899 (the preface was dated November, 1899). The new edition is almost entirely the work of Dr. John Broadbent. With his father's approval, he has re-arranged the subject-matter, and has added chapters on the pulse, disease of the coronary arteries, bradycardia, and atheroma of the aorta. He has also revised and re-written the chapters on acute and malignant, or—as the author prefers to call it—"pernicious," endocarditis, and on affections of the myocardium. At the same time, Sir William Broadbent has made several important additions to the chapters on angina pectoris and functional affections of the heart, and the proofs of the whole work have been read and corrected by him.

In the chapter on the pulse, Dr. John Broadbent properly draws attention to the confusion which has arisen through mistaking the condition of hypertonus and resulting hypertrophy of the muscular coat of the arteries for arterio-sclerosis or degenerative change in the arterial wall. In both states the radial artery feels hard and cord-like, and this leads to a mistaken opinion unless great care is taken. We notice that among the causes of arterial hypertonus and high arterial tension no mention is made of *acute* or subacute nephritis as distinguished from chronic interstitial nephritis, or of some forms of anæmia—especially chlorosis—in the young, in which latter condition doubtless the cause of the high tension is toxæmia, the result of imperfect metabolism.

Discussing the nomenclature of malignant endocarditis, Sir William Broadbent and his son suggest the term "pernicious"—used in the same sense as in the expression "pernicious anæmia"—as a more appropriate epithet than "malignant." The adjective "pernicious," while it denotes the serious nature of the disease, does not connote a necessarily fatal issue, and there can be no doubt that recovery occurs in some cases of the affection.

There is little to criticise adversely in this work. There are a few mis-spellings, such as "empyæma" (page 51), "morbus cœruleus" (page 211—an error carried on from the third edition), "genococcus" (page 75—obviously a printer's error). The use of the singular personal pronoun "I" in a book written by two authors strikes the reader as peculiar. On page 448 there is a sudden transition to the plural "we." These are, however, minor faults in a work of sterling merit, which has already taken rank as an English classic on Heart Disease.

The Science and Art of Prescribing. By E. H. COLBECK, M.D., F.R.C.P.; and ARNOLD CHAPLIN, M.D., F.R.C.P. Second Edition. London: Henry Kimpton. 1906. Pp. 198.

PART I. deals with methods of prescribing, incompatibility, solubility, correction of taste, &c., being treated. Part II. deals with application of the methods of prescribing, and contains a large number of formulæ grouped under headings of symptoms and diseases. The common error of depending on too limited a choice of drugs can be lessened by occasionally glancing through these pages.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—E. H. TAYLOR, M.D., F.R.C.S.I.
Sectional Secretary—A. F. DIXON, M.B.

Friday, April 27, 1906.

PROFESSOR A. FRASER in the Chair.

Slides illustrating the development of Fat.

PROFESSOR D. J. COFFEY exhibited and described a series of slides which illustrated, in a striking manner, the development of fat in a young animal. A discussion followed, in which Professor Milroy and Dr. Rowlette took part.

Specimens showing the Cranial Dura Mater exposed from below.

PROFESSOR SYMINGTON showed two specimens in which, after careful hardening of the parts in formalin, the base of the skull had been removed piecemeal, so as to exhibit the cranial dura mater from below. The relationships of the cranial nerves, of the Gasserian ganglion, and several other points were most clearly brought out.

THE CHAIRMAN spoke of similar specimens which he had himself prepared before the introduction of formalin, after injection of chloride of zinc solution.

Bulk staining of the Central Nervous System with Thionin.

Professor Milroy described a method of staining portions of the central nervous system in bulk with thionin. The advantages of the method were explained by Professor Milroy, and the beautiful series of slides which he exhibited clearly demonstrated the success of the method which he advocated.

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SECTION OF PATHOLOGY.

President—Joseph O'Carroll, M.D., F.R.C.P.I.

Sectional Secretary—Prof. A. H. White, F.R.C.S.I.

Friday, May 4, 1906.

The President in the Chair.

Exhibits.

Dr. F. C. Purser exhibited organs from a case of cancer of head of pancreas. He said the patient, a man, aged fifty-seven, complained of pain in the abdomen, especially in the region of the umbilicus. He gave a history of syphilis, jaundice, and great emaciation. The clinical notes revealed that the heart was normal as regarded the position of the apex beat. No murmur was heard. Patient developed sensory aphasia and hemiplegia of the right side, due to an embolus lodged in the cortical branches of the middle cerebral artery, and died on the 2nd of April. A large thrombus was found in the left ventricle, and well-marked vegetations on the aortic valves. Cocci were discernible in sections of the thrombi under the microscope. Thrombi formation in the heart was well known in cases of cancer, and it was not yet settled whether such a condition was due to organisms or to slow circulation. A hæmorrhagic infarct was found in the spleen, and secondary growths in the liver.

Dr. O'Carroll said fat necrosis was a common occurrence in pancreatic disease.

Prof. McWeeney inquired whether there were any thrombi on the right side of the heart.

Dr. Purser, in reply, said that no thrombi were found on the right side of the heart. In preparations of the thrombi from the left ventricle he saw what looked like staphylococci.

Unusual Degeneration of the Liver.

Prof. O'Sullivan said the patient from whom the liver was taken was a middle-aged man who had had two attacks of jaundice. He was under the care of Dr. Walter Smith and Sir Charles Ball. The latter operated, and found the common bile duct and gall bladder perfectly empty. There was no evidence of obstruction or of bile to be seen anywhere. The liver weighed 4 lbs. 5 ozs., was larger than normal, of a greenish-yellow colour, and the capsule was smooth. On section it showed greenish-yellow areas, separated by lines of red material. Microscopic examination showed that the centre of the lobule was degenerated, and a zone of comparatively healthy liver cells was to be seen towards the periphery. The degenerated cells in the centre showed an almost entire absence of protoplasm, and their nuclei were shrunken and deformed. A great many cells were filled with granules of bile pigment, and the bile capillaries were filled with plugs of inspissated bile. There was no inflammation of the smaller bile ducts, and no sign of increased connective tissue formation. The cells were separated from each other, and had lost their columnar arrangement. No bacteria were found. In ordinary fatty liver the fatty change was at the periphery of the lobules. It seemed possible, in cases where the bile capillaries were plugged, that the degeneration of the liver cells might be due to poisoning by the bile acids produced by the cells themselves.

Prof. McWeeney said the outer cells of the lobules also looked degenerate. They did not give a very good nuclear stain. He would like to have seen the appearance of the lobules in preparations stained for fibrin and fat.

Dr. Finny said he saw this man in consultation the day before he died. There was no evidence of phosphorus poisoning.

Prof. White said he saw a case three or four years ago which, in a certain manner, resembled the one under discussion. The patient died of sub-acute yellow atrophy. The liver showed red and yellow patches. In the red patches there was no formed connective tissue, but a small amount of granulation tissue. He did not see why this liver should not be classed with "yellow atrophy"—a condition which, in less severe forms, he thought was more common than was generally supposed. The absence of a large amount of fat in sections stained with osmic acid or Sudan III. would not prove that the liver cells had not undergone complete fatty degeneration, as the fatty products are quickly enough removed.

Dr. O'Carroll spoke of the tendency to consider the liver at fault when anything went wrong, and no other organ could be made out to be affected.

Prof. O'Sullivan, in reply, said the osmic acid sections which he had made had partly failed owing to imperfect penetration of the osmic acid; but even in the imperfect sections obtained the presence of fat was quite discernible. The experiments of Rosenfeld seemed to show that even in toxic degenerations the fat found in the liver cells was mainly deposited from the blood.

Aspergillus fumigatus in Eye.

Dr. H. C. Mooney exhibited specimen with culture of Aspergillus fumigatus in the eye, caused by an oat husk sticking on the cornea of an agricultural labourer. After cautery was applied, the patient got well. Only sixteen or seventeen cases of the kind have been recorded, two of which occurred in the United Kingdom.

Prof. McWeeney said he had seen Aspergillus fumigatus occurring in the auditory meatus.

Non-pigmented Flat Sarcoma of the Chorioid.

Dr. H. C. Mooney exhibited and showed sections of this rare condition.

Priestley Smith's New Method of Preserving Eyes for Museum purposes.

Dr. H. C. Mooney described the method and demonstrated its advantage over the older gelatine, and gelatine and formalin, methods.

Bacterial Association in a Case of Spreading Emphysematous Gangrene.

Prof. McWeeney stated that the patient was a youth, aged eighteen years, admitted under the care of Mr. McArdle to St. Vincent's Hospital, suffering from compound fracture of the right humerus, the result of a hunting accident. He was unconscious, and within four hours of the accident the temperature rose to 108°, evidently from shock to the medulla. Despite careful cleansing and replacement of the bones the arm became swollen and glazed after twenty-four hours, sero-sanguineous discharge came on, which became fœtid, the limb became dark and brawny, and emphysema occurred round the shoulder joint. Owing to the brain condition, amputation was out of the question. Free opening of the cellular spaces of the arm gave issue to the fluid, which was examined. The side of the chest and neck became emphysematous, and death occurred in four days after receipt of the injury. Bacteriological examination by anaerobic agar-plates in a Bulloch's apparatus yielded three organisms. One was a streptococcus, one a bacillus resembling *B. coli*, and the third was *Bacillus aerogenes capsulatus* of Welch and Nuttall. This proved to be a large, anthrax-like, motionless rod with rounded ends, staining well with Gram; spore-formation not observed, though it must have been present on the bacilli Gram from portion of exudate that had been heated to 80° C. for ten minutes. They formed flocculent whitish colonies in gelatine and agar. The former crustations was not liquefied but only softened. Much gas formation. A rabbit injected intravenously with 1 cc. of the broth culture and then killed, and the body kept warm overnight, showed enormous distension of the solid viscera with gas bubbles ("foaming" organs).. He now showed some of these organs [demonstration]. Curiously, he had failed to induce the bacillus to grow on Löffler's serum or in blood outside the body. The gas had a slight odour of rancid butter. The B.-coli-like bacillus could not ferment any sugar, and was an alkali-former—in fact the only feature in which it resembled *B. coli* was its colonies on gelatine. It was a very short non-motile rod, often resembling an oval diplococcus. If intra-peritoneally inoculated it produced purulent peritonitis in a rabbit, which however, recovered. The streptococcus grew abundantly on gelatine, made broth diffusely turbid, and was non-pathogenic for rabbits by itself, but injected along with the B.-coli-like bacillus it killed them. Cultures and microscopic preparations of all three organisms were demonstrated.

Brain Tumours.

Prof. McWeeney exhibited two—one being an angio-sarcoma (perithelioma) of the right *centrum ovale*, the other an encapsuled sarcoma of the pons.

Leukæmia due to Large Mononuclear Leucocytes.

Prof. McWeeney showed blood films of this rare condition.

CHRISTIAN SCIENCE.

By John Knott, M.A., M.D., Ch.B., & D.P.H. (Univ. Dub.); M.R.C.P.I.; M.R.I.A., &c.

The fact that *Christian Science* has of recent months been appearing (and re-appearing) with a considerable degree of regularity in the police court, and before the coroner, goes to prove that ridicule—at least the scientific form of that weapon—does not always kill, in spite of the proverbial truth of proverbs. Orthodox theology has combined with scientific medicine in denouncing its teaching and practice as pernicious—to soul as well as body, to spiritual health as well as corporal. The Bishop of London has publicly denounced it as "a gigantic heresy." Medical journals of all grades—first-rate, second-rate, and (down to) *n*-th rate—have, from time to time, treated their readers to the perusal of editorial denunciations of its preposterously unscientific theory and the criminally dangerous application thereof. As a wise contemporary points out, it is only when the Christian Scientist is subjected to a legal inquiry that the absolute hollowness of his claims can be exposed. This exposure—and consequential scientific comment—has been exhibited to the public over and over again, and yet Christian Science doth still live! The apostle of this cult has survived the repeated denunciations of himself and his belief and his work—as a bogus medical practitioner of the worst type, a danger to the State, and a cruel parasite upon society. And now we have just seen that a medical man of fifteen years' professional experience resigned his profession about a year ago in favour of the new practice—with the result that he has been placed in the criminal dock on a charge of manslaughter. Possibly the very searching investigation which the case of the late Major Whyte, D.S.O., is sure to receive may have some beneficial effect in the direction of the much-needed enlightenment of public opinion regarding the merits and pretensions of this latter-day panacea for the physical ills of humanity.

When a fully-defined body of doctrine (and practice), such as Christian Science proves (or claims) to be, finds widespread acceptance among men, the fact of its doing so may, I think, fairly be held to constitute undeniable proof that its introduction has filled a previously existent vacancy in the domain of human opinion. Intellectual, as well as atmospheric, currents are continuously flowing—their unceasing restlessness being apparently necessary to prevent hopeless contamination of their respective media. Both kinds also vary—with apparent similarity—in force and area of distribution: from the Zephyr breath which barely serves to waft the perfume, and cause audible agitation of the strings of the Æolian harp, to the scorching suffocation conveyed by the sandy simoom, and the explosive violence of the irresistible tornado. But of whatever type and degree—cyclonic or anti-cyclonic, breezy, gusty, stormy, or thunder-charged—their existence is surely demonstrative of the pre-existence of an area of unstable equilibrium, as their direction is of its locality. Their momentum forms a true index of the (tendency to) vacuity—Nature's pet aversion—which had existed in the space towards which they flow. Now the development and persistence of the Christian Science current of opinion may, I think, be held to have surely proved two facts: (1) the survival into our own generation of the pre-scientific belief in—and even hankering after—the supernatural and the miraculous; and (2) the (at least, partial) failure of contemporary medicine and surgery to satisfy the demands and secure the complete confidence of the members of the suffering section of humanity and their confidential advisers. Its existence in this age of vaunted enlightenment has awakened thoughtful observers to recognition of the conservative pertinacity with which the primitive—very characteristically human—pathways of thought are still trodden by a large proportion of the human race, in presence of—and, indeed, directly in spite of—the influences of (quasi-) miraculous scientific conquest, and universally diffused education. It has demonstrated the survival of the point of view from which the inhabitants of pre-Christian Judæa regarded the visitation of disease as the entrance of an unfriendly spirit. It shows an unmistakable revival of some, at least, of the modes of thought which prevailed in mediæval times, when the victims of prolonged disease nearly always endeavoured to avail themselves of the knowledge and power which were almost exclusively confined to the Catholic hierarchy—in those centuries when murder and robbery, with suitable correlated amusements and minor occupations, formed the life-long business of monarchs and aristocrats: when the fact of a non-member of one of the learned professions being able to sign his own name was regarded as satisfactory proof that he was *not* a "gentleman"; when the scientific culture of the healing art was almost exclusively maintained by the Irish and the Jews, and its "unqualified practitioners" included the whole motley host of magicians, astrologers, herbalists, witches, and gypsies. In those good old days of the identity of might and right, the destruction of life (and appropriation of property) formed the recognised profession of men of "honour and dignity"; the saving thereof, the relief of pain and the prolongation of human existence, constituted the occupation of menials, who were despised even when most skilled and honourable, except in the hours of physical suffering; and pretenders, often criminal and always ignorant, whose incurable moral strabismus probably prevented them from distinguishing between right and wrong. "Times have changed" since then; so have "things," and opinions and modes of thought: very many, indeed, but not all. Education and even evolution have left the basic features of humanity very much as they were on leaving the Garden of Eden. And I would suggest that in presence of the persistent belief in the miraculous—in spite of all the revelations of physical science—and obvious dissatisfaction with the results of our most up-to-date practice, in presence of our complete familiarity with pathogenic microbes and our almost startling dexterity in the synthesis of the most important alkaloids, the leaders and teachers of our profession should more seriously recognise the significance of the existing facts of the broadcast diffusion of the methods of Christian Science, investigate their actual sources, and devise the most efficient means for counteracting and neutralising their pernicious effects.

It is very true that the doctrine and its applications have been repeatedly attacked and subjected to vigorous denunciation and copious ridicule—the latter I have thought, in most cases, of an exceedingly clumsy type. The editorial critic has often seemed to me to discuss his subject in a tone of too loftily-removed distance; he appeared to scorn the idea of coming to close quarters. The man of *science* in the pride of his knowledge, actual or fancied, has usually ignored the fact that Christian Science, if not exactly "scientific," is, most assuredly very human; an excrescence, indeed, and an unhealthy one; but a specimen which has unquestionably grown on the spiritual side of the nature of *homo sapiens*. He has also, so far as I can remember, ignored the significant truth that the existence of this doctrine and practice forms an index of the fact that his own claims have been badly discounted; that they have been found wanting in some important essentials; and that he should regard the promulgation of the new therapeusis as a warning to set his own house in order, re-furnish his armoury, brighten his weapons, man all his defences, extend his outposts, and vigorously insist on the watchfulness of all his sentries. In attacks on the pernicious folly of Christian Science, logical methods cannot be very effectively applied, for the necessary evidence which can be obtained only from the results of simultaneous test and control experiments is never available. Foul-mouthed abuse, delivered with sledge-hammer weight and force, may relieve the mental feelings of its manufacturer and dispenser; but it will hardly convince the thinking part of the community, or enlist the sympathies of the more refined. The *ad hominem* argument, in some of its shapes, must be the principal weapon of attack in such cases. But much skill is required to make its application effective; and this does not seem to have been very conspicuously displayed in the columns of the orthodox editorials of our contemporaries. The soul-stinging irony of a Pascal or a Gibbon, which set every individual member of their respective hosts of opponents simultaneously writhing and howling all over Christendom, requires something approaching the skill and culture of one of those literary Titans to produce and apply it with telling results. The employment of scathing sarcasm, when prepared with the razor-edged subtlety of a Voltaire, or the Nasmyth momentum of a Huxley, would surely produce earthquake effects on the defences of Christian Science; but, unhappily, we miss the powers of those wizards at the roll-call of the representatives of the "inner circle" of the science of the opening years of the twentieth century.

The glaring fact is that the feverish haste for immediate results is so great in the present generation that nothing is to be learned that will not pay; no intellectual ballast is to be taken on board; no superfluous culture to be sought for; no effort wasted in the acquisition of attainments which are not immediately negotiable in cash. Such, I must regretfully indicate, is the programme of a mechanical, not of an intellectual, generation. It calls for the abolition of Greek teaching among the future votaries of science. This means extinction of the view of the original source of all the literature and the most subtle and profound thought to be found diffused throughout the whole of Western Europe. Such influences go to make the possession of muscular vigour a more important factor in the attainment of eminence in a (formerly) learned profession than that of knowledge and skill. It very naturally has the effect of making the professional gentleman who has attained the goal of his ambition without a knowledge of Greek (or Latin, or even native English) fail, as did Dr. Primrose's casual acquaintance, to see the good of that language.

The much vaunted triumphs of reason over faith, which are assumed to constitute the special glory of our over-journalised generation, assuredly require attention in some of those aspects which have most completely escaped critical notice. A recent historian of rationalism assures his readers that he would not bestow on such an "unnecessary and thankless task as the refutation of theological error" even so much intellectual exertion as would be included in "the labour of a week or a day." And he further informs them that: "the true liberation must come from the enlargement of mind by wider and more accurate views of the natural universe. As this takes place, the mediæval beliefs must drop away of themselves." The dogmatic self-satisfaction which illuminated the inner consciousness of the writer of these sentences, as he contemplated the solidity of the foundations of his own (home-made ?) opinions, must, I feel sure, be admitted by all. Yet in the face of the deluging torrents of such volumes and such opinions we have the fact that the lineal representatives of the abused and derided mediæval theology are not merely holding their own, but are actually winning all along the line. Their continuity of traditional knowledge and experience, their unequalled organisation, and their cosmopolitan intercommunication combine to furnish the most reliable and adaptable acquaintance with the undulatory (or circular, or irregularly curvilinear) movements of that phenomenally unstable entity—the human understanding, individual and collective. And all the contemporary history of the whole period of our own generation—and, even more emphatically, of the twentieth century section of the same—goes to contradict and disprove the confident view of the assured and absolute (progressive) conquest of the domain of the spiritual and emotional in human nature by the purely materialistic and utilitarian. A very wise

German physician of the past generation defined *neuralgia* to be "a cry of the nerves for healthy blood." This view, and the words in which it was so very happily and concisely expressed, can, I venture to assert, be applied with a very suitable adaptation of metaphor to many of the innumerable excrescences of unpruned opinion and dogmatic belief which at present cloud our intellectual atmosphere; and very specially, I would say, to that of Christian Science—which at present looms so prominently above the mental—and medical—horizon. The conspicuous growth of this unhealthy plant appears to me to represent an agonising appeal to the Invisible Power which—so far as I have been able to ascertain—every human being possesses an innate tendency, however deeply encrusted by negligence or soiled by circumstances, to make an object of adoration; or to which he would, at least, attribute undefinable and unlimited powers. In other terms, I regard it as an outcry of the collective emotions of the human spirit against the undoubted tendency of the materialistic "science" and mechanical "progress" of the present day to (reduce or) improve man into a very efficient calculating machine, and to denounce—or, at least, depreciate—his worship of any spiritual concept or physical image of omnipotence, other than that represented by the "almighty dollar."

A free-thinking and philosophical fellow-countryman of ours wrote, a long time ago, a very interesting—and, in many aspects, a very original—volume, "Christianity as old as the Creation," a title which lucidly enunciated the thesis which the author had undertaken to expound and defend. It formed one of the earlier landmarks of the modern rationalistic movement in the embryonic era of its growth. And as rationalism appears to form the opposing reflex of religious thought and culture, it has pretty surely some considerable claims to an antiquity of existence as remote of origin as the earliest collective co-ordination of human thought. And a very interesting biological feature of the life-history of rationalism is that its existence is essentially a parasitic one (perhaps better described as saprophytic); for its activity—as well as its original genesis, birth, and development—depends on the prominence of the position occupied in the public mind by the superstitions (or religions, or faiths) whose domains and strongholds are the avowed objects of its attacks. When victorious, as it usually appears to be, or persuades itself that it really is, over a certain hydra-headed combination of obstinately vital beliefs, it proceeds to lay to its soul, and to the souls of its militant band of critical iconoclasts, the very flattering unction that it has given the final death-blow to the serpentine spirit of superstition. But if rationalism appears in the season of its declared triumph to be endowed with the strength and the weapons of a Hercules, we most assuredly have (and this item of history has never failed to repeat itself) its opponent demonstrating its characteristically pythonic nature by displaying to the full the tortuous, and unexpected, and self-renewing, vitality which distinguished his proverbially many-headed opponent. Were the hydra of superstition to cease to reproduce its heads, the occupation of rationalism would be gone; its inspiration being removed, it would collapse for want of inflating material. The fact that the rationalist, after having successfully (as well as scientifically and *brilliantly*) demolished the defences and exterminated the garrisons of so many faiths and opinions, has no positive scheme of the Cosmos which he can utilise to occupy the vacancies so created, is the very significant cause of the hopelessly unsatisfying nature of his final results. His interminable task, like that of Sisyphus, has always obliged him to begin over again immediately after having reached, in apparent triumph, the appointed goal of his scientific and argumentative ambition.

This characteristic feature, and the facts therewith connected and thereon dependent, have been very demonstratively re-repeated in the course of the rapid and feverish progress of the past half century and the commencing years of the present. Yet it does not seem to have proved to the average (intelligent and educated) citizen so clearly as it might have done that the craving of the human spirit for faith, or belief in the invisible and unknowable, is one which cannot be completely stifled—any more than can hunger, which was grafted by an over-seeing Providence as an essential agency in the preservation of the individual; and sexual desire, which was bestowed for the securing of the maintenance of the species. However frequently, and remotely, religion may have appeared to alter its central basis of support down through the centuries of recorded time, it has, in all the ages and nationalities, displayed sufficient adaptability to the spiritual cravings of the peoples to whom its message was being delivered to enable it to cast off the accidents which had for a period obscured the features and disguised the actual form of the body of its doctrine. History has repeatedly demonstrated the fact that an opinion (or group of opinions) which was unsuccessfully ventilated or ruthlessly crushed down by one generation may sweep over the next with the force and velocity of a tidal wave. The late Mr. Lecky keenly appreciated the importance of the determining influence of the *intellectual atmosphere* in the growth and developmental expansion of opinion; and Mr. Balfour also accepts the claims of the same meteorological power (with the stage-name and surname of "psychological climate") as one of the most important factors in modifying the attitude of an epoch towards the beliefs and doctrines of the past. The eye of the philosophic student of the wavy modifications of human opinion perceives that the surface phenomena of arguments and definitions are almost always the symptoms and pretexts, very rarely, indeed, if ever, the causes, of any far-reaching changes. They really derive their force of movement and efficiency of application from their adaptability to, and conformity with, the mental habits and aptitudes of those to whom they are addressed; and, in accordance with this fundamental fact, we find that reasoning which is rejected by one generation as utterly flat and unprofitable, if not actually stale, is greedily absorbed by the next, whose intellectual leaders may be heard to trumpet its triumphs in tones of enthusiastic applause. The germs—mentally pathogenic, as the rationalist regards them—of so-called Christian Science have been floated broadcast throughout the intellectual atmosphere. And their fate has been truly scriptural. Those which fell upon the solid rock of genuine reason and physical knowledge inevitably perished for want of sustenance; those which fell by the wayside, over which hovered the rationalistic and sceptical birds of passage were swiftly devoured—although, probably, never well digested—by the winged denizens of the gaseous envelope of the intellectual globe; while those which happened to alight on the naturally fertile, but neglected and uncropped, earthy soil of the vicinity immediately rooted and brought forth a hundred-fold.

The frequently disappointing results of medicine and surgery have, very naturally, had the effect of discounting the confidence of that advanced—and very representative—section of the members of the tax-paying community who insist upon seeing and feeling before believing; or, at least, before registering their beliefs by acting on their private opinions. The limits, actual and possible, of true scientific therapeusis should, accordingly, always be defined with perfect distinctness on the visual horizon of the intellect of every true physician As this circle widens, with the progress of true knowledge, its expansions must be familiar as watch-hand rotations; it is only the healer who so scrutinises the boundaries of his heritage who can be regarded as a true representative of the one profession which was practised and blessed by the Saviour of Mankind during His own pilgrimage on earth; and it is only by the hands of such ever-watchful guardian members of our profession that its field of usefulness to suffering humanity can be defended from the encroachments of blasphemous pretenders to divine enlightenment and mysterious—if not miraculous—powers of healing. In furtherance of this noble missionary work, we should all be up and doing; the consciousness of conformity with the dictates of the truest faith and the highest sense of duty should ever be regarded by the true physician as his best reward—even in a generation in which the muscularity of a "learned" profession scores higher than its intellectuality, and a complete somersault on the political tight-rope secures the branding of the acrobatic healer with indelible "eminence," as judiciously and exclusively as it did for the ambitious politician at the Court of the Empire of Lilliput. It is only by the collective exertions of a garrison of physicians fully armed with all the weapons of true science and true faith that the border inroads of such "inspired" healers as the apostles of Christian Science can be permanently checked.

To every earnest and inquiring soul concerned with this, and other similar questions, there is permanently present the consciousness that behind and beneath all such lurks the unchanging moral of the vanity of human aspirations, and the failure of all the innumerable voyagers and explorers to localise the mental and moral geography of the Atlantis of immutable *truth*. *Justice* and *happiness*, the other great objects of the pursuit of the philosopher and philanthropist, seem to have proved equally successful in evasion of the grasp of the most industrious and enthusiastic of their would-be captors. Recent political history well shows that poverty, misery, official corruption, social injustice, and unlimited discontent may be found to flourish and extend their branches as widely in the most advanced democracy as in the most absolute monarchy. So do their associated results and consecutive consequences, physical and moral. The materialism and utilitarianism of recent times have continuously aimed—and with a considerable proportion of success—at the weeding (or stamping) out of all the higher emotions, as their results were but visionary and unpractical—and, accordingly, unmarketable. It was felt by the apostles of these modern doctrines that the influence of the passions and emotions of the human soul acted as a permanent (and sometimes explosive) drag on the wheels of the human calculating machine, while no saleable commodities could safely be generated from their activity. In order fully to utilise the value of these very enlightening views and discoveries it became inevitably a matter of necessity that superstition—and even its most disciplined representative, orthodox religious belief—must be extinguished, as otherwise unsurmountable obstacles in the paths of "scientific" progress and materialistic "success." Passion of every kind must be completely eliminated; all emotions must be absolutely controlled; faith must submit to physical tests. This programme has been worked with increasing demonstrativeness—and loudly-announced advertisement of results—during the latter half of the past century and the opening years of the present, and the discouraging result is that current events furnish an unquestionable demonstration of the depressing fact that in presence of the seven-league strides of physical science, and its continuously successful inroads on the mysteries of nature, the human race, as a whole (and perhaps individually), still remains unsatisfied: while the members of its most "advanced," and most materialistic, sections are probably the most miserable of all. The emotional longings for, and aspirations after, "things above" still stubbornly refuse to submit to extermination or eviction; the hankering after the mysterious, the unknowable, and the unattainable—the human characteristics, in fact, which most definitely distinguish man from brute—still survive in the human spirit, and retain their vital and moral influence in the human heart. Their attempted suppression leads to recurrences of volcanic explosion—in type and form sometimes ridiculous, or even preposterous; sometimes painfully insane; and sometimes horribly criminal. It may, indeed, be said to have furnished the mainspring of the most characteristic form of criminality of our generation. It is surely short-sighted to deny (? not to see) the effects of the passions and emotions on the circulation—and, consequently, on nutrition—in the human body. The pallor of fear, the glow of hope, the flush of anger, the jaundiced hue of jealousy, are surely significant indexes of the respective influences. The fact that such are usually transitory causes most people to ignore the permanence of their effects when unusually prolonged. It is not merely useless, it is positively mischievous, in the interests of true enlightenment, to deny that wonderful—apparently "miraculous"—cures have been obtained by Christian Science. They most assuredly have been at Lourdes—scoffing materialism notwithstanding. One of the specially vivid reminiscences of the boyhood of the writer of this article is one of a glorious summer morning, on which two bathers were drowned in Sligo Bay. The place was a very crowded resort, and everybody flew to the scene. An anæmic lad, of about fifteen, was *running* about the strand in a state of great excitement. On speaking to him, he told me that he had come from the country to the sea-side with the hope of benefiting his *lameness*, and pointed to a *crutch and stick*, at some distance, without which he had never been able to walk for eighteen months before. The cumbrous aids to pedestrianism were not resumed; the shock of witnessing the fatal accident effected a permanent cure. Earthquake vibrations have wrought wondrous cures in certain neurotic cases.

Medical men should surely recognise the position, with its manifold obvious bearings and collateral influences, and contribute—as, I venture to suggest, they readily can—to the true higher education of the public. As members of a learned and trusted profession, their opinions will, if conveyed with the skill and illustrative knowledge which they should be able to utilise, exercise a broad and deep collective influence on those of the general community. It is also of greater interest and importance to us than to most sections of the public to keep continuously in touch with the leaders of the advanced guard of thought. And the confidence of the heads of families in their trusted medical consultant gives him opportunity and influence in the formation and continuous culture of collective opinion on the more profound subjects of human speculation, which is second to none but those of the accepted spiritual adviser: and the special facilities afforded by the necessity of his presence in times of the deepest trouble and anxiety offer the very best seed-time for the implantation of those germs of opinion which should produce the giant growths of the future forest of human thought. It should always be remembered that the most active intellects and most naturally fertile imaginations must inevitably produce the most mischievous weeds of opinion and consequent practice, when grossly neglected and viciously cultivated; as the rankest pasture field produces the largest thistles, and the sweetest wine yields the sharpest vinegar. And as surely true as the latter familiar proverb is the fact that unsatisfied aspirations and disappointed hopes have created: on the one hand, a cosmopolitan brotherhood of bomb-throwing *anarchists*; on the other, a devoted crusade of *Christian Science* healers!

VOYAGES D' ÉTUDES MÉDICALES AUX STATIONS HYDROMINERALES ET CLIMATIQUES DE FRANCE.

THE eighth Voyage d' Études Medicales (V. E. M.) will take place from the 1st to the 12th of September, 1906. It will comprise a visit to the health-resorts of Savoy and Dauphiné: Hauteville (sanatorium), Evian-les-Bains, Thonon, Saint-Gervais, Chamonix, Annecy, Aix, Marlioz, Le Revard, Challes, Salins-Moutiers, Brides, Pralognan, Allevard, Bouquéron, La Motte, Uriage. The V. E. M. of 1906—like the seven previous medical tours—has been placed under the scientific guidance of Dr. Landouzy, Professor of Clinical Medicine in the Faculty of Medicine of Paris, who will deliver at each health-resort an Address on its indications and applications in hydromineral medication (treatment by mineral waters). A reduction of half-price in fares on all railways will be allowed to members of the party from their place of residence to the rendezvous at Lyons. Foreign physicians will benefit by a similar reduction of fare from the railway station at which they set foot on French soil. A like reduction of fare will be allowed, at the end of the tour, at Uriage, for the return journey to the railway station from which each member originally started. From Lyons to Uriage, inclusive contract fare: 300 francs, for railway, carriages, hotels, board, conveyance of luggage, and gratuitites. For all detailed information application should be made to Dr. Carron de la Carrière, 2 Rue Lincoln, Paris (eighth arrondissement), or to Dr. Jouaust, 19 Rue du Colisée, Paris (eighth arrondissement). Entries will be received up to August 15, 1906, at latest.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, May 19, 1906.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending May 19, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, May 19, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 28	May 5	May 12	May 19			April 28	May 5	May 12	May 19	
22 Town Districts	22.9	24.0	22.4	21.4	22.7	Lisburn -	63.7	22.7	13.6	36.4	34.1
Armagh -	34.4	13.7	6.9	34.4	22.4	Londonderry	18.6	19.8	23.6	24.8	21.7
Ballymena	4.8	14.4	4.8	19.2	10.8	Lurgan -	17.7	26.6	17.7	17.7	19.9
Belfast -	22.1	26.0	23.4	20.4	23.0	Newry -	29.4	33.6	16.8	8.4	22.1
Clonmel -	41.0	25.6	20.5	20.5	26.9	Newtownards	22.9	34.3	45.8	11.4	28.6
Cork -	26.0	21.2	24.0	24.7	24.0	Portadown -	10.3	10.3	5.2	10.3	9.0
Drogheda -	8.2	12.3	20.4	8.2	12.3	Queenstown	13.2	13.2	13.2	19.8	14.9
Dublin (Reg. Area) -	22.4	25.9	21.7	21.6	22.9	Sligo -	24.0	9.6	33.6	33.6	25.2
Dundalk -	23.9	12.0	8.0	12.0	14.0	Tralee -	21.1	26.4	26.4	21.1	23.7
Galway -	23.3	19.4	38.8	15.5	24.2	Waterford -	21.4	17.5	15.6	31.2	21.4
Kilkenny -	63.9	4.9	14.7	39.3	30.7	Wexford -	18.7	18.7	23.3	28.0	22.2
Limerick -	20.5	26.0	32.8	16.4	23.9						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, May 19, 1906, were equal to an annual rate of 1.1 per 1,000, the rates varying from 0.0 in sixteen of the districts to 5.1 in Clonmel—the 4 deaths from all causes in that district including one from enteric fever. Among the 140 deaths from all causes in Belfast are 13 from whooping-cough, one from diphtheria, one from enteric fever, and one from diarrhœa. The 20 deaths from all causes in Londonderry include 2 from measles; and among the 3 deaths in Dundalk is one from diphtheria.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, May 19, 1906, amounted to 202—99 boys and 103 girls; and the deaths to 169—86 males and 83 females.

DEATHS.

The deaths registered during the week ended Saturday, May 19, represent an annual rate of mortality of 23.3 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the area, the rate was 21.6 per 1,000. During the twenty weeks ended with Saturday, May 19, the death-rate averaged 24.1, and was 4.4 below the mean rate for the corresponding portions of the ten years 1896-1905.

Of the registered deaths (169) 2 were from diphtheria and one was from *diarrhœa.* In the 3 preceding weeks, deaths from diphtheria were 2, 0, and 0; and deaths from diarrhœal diseases were 4, 0, and 3.

Lobar pneumonia caused one death, broncho-pneumonia 2 deaths, and *pneumonia* (not defined) 10 deaths.

There were 32 deaths from all forms of tuberculous disease, including 4 deaths from tubercular phthisis, 12 deaths from *phthisis*, 4 deaths from tubercular meningitis, 10 deaths from hoter forms of the disease, and 2 from *scrofula*. In the 3 preceding weeks the deaths from all forms of tuberculous disease numbered 32, 51, and 28 respectively.

Carcinoma caused 6 deaths and cancer (undefined) 9 deaths.

Diabetes caused 2 deaths, and the deaths of 7 infants prematurely born were registered.

There were 14 deaths from diseases of the brain and nervous system, including 6 deaths from *convulsions*, 5 of the latter being those of infants under one year of age.

Diseases of the heart and blood vessels caused 28 deaths, and bronchitis caused 13 deaths.

There were 4 accidental deaths, including one (that of a child aged one year and 9 months) by burns, and one by drowning.

In 7 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under 5 years of age (including 2 infants under one year old) and the death of one person aged 65 years.

Forty-one of the persons whose deaths were registered during the week were under 5 years of age (25 being infants under one year, of whom 12 were under one month old); and 41 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 8 were octogenarians, and 3 (one male and 2 females) were stated to have been aged 90, 92, and 96 years, respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended May 19, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping cough	Cerebro-spinal Fever	Total
City of Dublin	Apr. 28	-	*	*	7	-	-	3	-	-	6	3	-	*	*	*	19
	May 5	-	*	*	4	-	-	6	-	1	1	4	-	*	*	*	16
	May 12	-	*	*	4	-		7	-	1	5	13	-	*	*	*	30
	May 19	-	*	*	6	-	-	11	-	2	9	14	-	*	*	*	42
Rathmines and Rathgar Urban District	Apr. 28	-	*	*	1	-	-	1	-	-	-	1	-	*	*	*	3
	May 5	-	*	*	1	-	-	2	-	-	-	-	-	*	*	*	3
	May 12	-	*	*	1	-	-	2	-	-	-	-	-	*	*	*	3
	May 19	-	*	*	2	-	-	-	-	-	-	-	-	*	*	*	2
Pembroke Urban District	Apr. 28	-	-	-	-	-	-	-	-	-	-	-	-	*	6	-	6
	May 5	-	2	-	1	-	-	-	-	1	-	-	-	*	4	-	8
	May 12	-	1	-	1	-	-	1	-	-	1	-	-	*	1	-	5
	May 19	-	-	2	-	-	-	2	-	1	1	1	-	*	3	-	10
Blackrock Urban District	Apr. 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 5	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 12		*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 19	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	Apr 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 5	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 12	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 19	-	*	*	-	-	-	-	-	-	-	1	-	*	*	*	1
City of Belfast	Apr. 28	-	*	*	18	-	-	3	-	7	6	3	1	*	*	*	38
	May 5	-	*	*	17	-	-	3	-	11	7	4	-	*	*	*	42
	May 12	-	*	*	13	-	-	2	-	4	4	7	-	*	*	*	30
	May 19	-	*	*	9	-	-	1	2	4	5	4	-	*	*	*	25

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended May 19, 1906, 6 cases of measles were admitted to hospital, 3 were discharged, and 28 cases remained under treatment at the close of the week.

Nine cases of scarlet fever were admitted to hospital, 6 were discharged, and 39 cases remained under treatment at the close of the week. This number is exclusive of 19 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Eight cases of diphtheria were admitted to hospital, 7 were discharged, and 34 patients remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, one case was discharged, and 28 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 21 cases of pneumonia were admitted to hospital, 14 were discharged, 2 patients died, and 33 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended May 19, 1906, in 76 large English towns, including London (in which the rate was 14.0), was equal to an average annual death-rate of 14.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17.6 per 1,000, the rate for Glasgow being 19.0, and for Edinburgh 17.9.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended May 19. From this Return it appears that of a total of 25 cases notified 12 were scarlet fever, 5 diphtheria, one puerperal fever, 5 erysipelas, and 2 typhoid fever. Among the 315 cases of infectious diseases in hospital at the close of the week were 136 cases of scarlet fever, 34 of diphtheria, 86 of measles, 13 of erysipelas, 14 of whooping-cough, and 8 of typhoid fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of May,* 1906.

Mean Height of Barometer	29.812 inches
Maximal Height of Barometer (14th, at 9 a.m.),	30.126 „
Minimal Height of Barometer (2nd, at 9 a.m.),	29.435 „
Mean Dry-bulb Temperature,	50.9°.
Mean Wet-bulb Temperature,	47.6°.
Mean Dew-point Temperature,	44.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.296 inch.
Mean Humidity,	78.8 per cent.
Highest Temperature in Shade (on 28th),	68.9°.
Lowest Temperature in Shade (on 10th),	35.0°.
Lowest Temperature on Grass (Radiation) (10th),	31.5°.
Mean Amount of Cloud,	73.3 per cent.
Rainfall (on 20 days),	2.472 inches
Greatest Daily Rainfall (on 19th),	.500 inch.
General Directions of Wind,	S.W., N.N.E., S.

Remarks.

Like May, 1905, this month was characterised by a prevalence of winds from Polar quarters. Only in the first and last weeks did an equatorial air current assert itself. The Polar winds were accompanied by much cloud and frequent rain or showers. The percentage of cloud was as high as 73.3. The estimated duration of bright sunshine was 127.75 hours, compared with 225 hours in 1905, 195.75 hours in 1904, 178.5 hours in 1903, 178.75 hours in 1902, and 302.25 hours in 1901. The daily mean duration of sunshine was 4.1 hours, compared with 7.3 hours in May, 1905.

In Dublin the arithmetical mean temperature (51.7°) was 0.4° below the average (52.1°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 50.9°. In the forty-two years ending with 1906, May was coldest in 1869 (M. T. =48.2°), and warmest in 1893 (M. T. =56.7°). In 1905 the M. T. was 54.0°.

The mean height of the barometer was 29.812 inches, or 0.177 inch below the corrected average value for May—namely, 29.989 inches. The mercury rose to 30.126 inches at 9 a.m. of the 14th, having fallen to 29.435 inches at 9 a.m. of the 2nd. The observed range of atmospheric pressure was, therefore, 0.691 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50.9°, or 5.6° above the value for April, 1906—45.3°. Using fhe formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.*) × .47, the value is 51.3°, or 0.4° below the average mean temperature for May, calculated in the same way, in the thirty years, 1871-1900, inclusive (51.7°). The arithmetical mean of the maximal and minimal readings was 51.7°, compared with a thirty years' average of 52.1°. On the 28th the thermometer in the screen rose to 68.9°—wind, S.E.; on the 10th the temperature fell to 35.0°—wind, N. The minimum on the grass was 31.5°, also on the 10th.

The rainfall amounted to 2.472 inches, distributed over 20 days. The average rainfall for May in the thirty-five years, 1866-1900, inclusive, was 2.020 inches, and the average number of rainy days was 15. The rainfall and the rainy days were, therefore, both above the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869, also, 5.414 inches fell on 19 days. On the other hand, in 1895, only .177 inch was measured on but 3 days. In 1896 the fall was only .190 on 7 days. In 1905, 1.182 inches fell on 10 days.

A solar halo appeared on the 1st and again on the 12th. High winds were noted on 6 days, and attained the force of a gale on the 2nd and 17th. Hail fell on the 16th and 17th. There was a fog in the evening of the 26th.

During the month the thermometer did not fall below 32° in the screen, but on the 10th it fell to 31.5° on the grass. The mean minimal temperature on the grass was 41.9°, compared with 42.5° in 1905, 42.6° in 1904, 44.3° in 1903, 40.3° in 1902, 41.7° in 1901, 41.6° in 1900, 40.6° in 1899, 42.9° in 1898, 40.9° in 1897, 43.1° in 1896, 41.8° in 1895, and 37.6° in 1894. The maximum reached or exceeded 60° on 9 days, and fell short of 50° on 2 days. It never reached 70°.

The rainfall in Dublin during the five months ended May 31st amounted to 11.592 inches on 97 days, compared with 9.026 inches on 81 days in 1905, 11.741 inches on 92 days in 1904, 12.560 inches on 95 days in 1903, 9.973 inches on 81 days in 1902, 7.724 inches on 67 days in 1901, 9.921 inches on 92 days in 1900, 9.652 inches on 87 days in 1899, 10.568 inches on 84 days in 1898, 10.693 inches on 93 days in 1897, 5.971 inches on 70 days in 1896, and a thirty-five years' average of 10.140 inches on 80 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Thomas H. Hill, Sch., returns the mean height of the barometer as 29.813 inches, the highest reading observed being 30.124 inches at 9 a.m. of the 14th, the lowest, 29.438 inches at 9 a.m. of the 2nd. The arithmetical mean temperature was 50.9°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 50.8°. Rain fell on 19 days to the amount of 2.408 inches, .486 inch being measured on the 19th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 132.5, giving a daily average of 4.3 hours. The corresponding figures for May, 1904, were 192.5 hours and 6.2 hours, and for 1905, 215.7 hours and 7.0 hours, respectively. The mean earth-temperature at 9 a.m. was 50.7° at a depth of one foot below the surface, 48.6° at 4 feet.

At Knockdolian, Greystones, Co. Wicklow, the rainfall, measured by Mr. R. Cathcart Dobbs, J.P., was 2.245 inches, distributed over 16 days—.495 inch falling on the 19th, and .455 inch on the 23rd. The total fall since January 1st, 1906, equals 11.665 inches on 66 days, compared with 9.611 inches on 67 days in 1905, 12.027 inches on 84 days in 1904, 15.655 inches on 79 days in 1903, 11.750 inches on 68 days in 1902, 11.205 inches on 65 days in 1901, 16.381 inches on 84 days in 1900, and only 5.716 inches on 52 days in 1896.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, as 2.74 inches on 21 days, compared with 1.42 inches on 11 days in 1905, 2.46 inches on 18 days in 1904, 2.86 inches on 18 days in 1903, 3.26 inches on 22 days in 1902, and 1.09 inches on 10 days in 1901. The greatest daily measurement was .62 inch on the 23rd. The temperature in the shade ranged from 66° on the 28th to 37° on the 1st. The mean temperature of the month was 51.8°, compared with 54.5° in 1905, 53.3° in 1904, 53.1° in 1903, 50.5° in 1902, and 52.6° in 1901. There were hail showers on the 16th and 17th.

According to Mr. Robert O'B. Furlong, C.B., the rainfall at Cloneevin, Killiney, was 2.55 inches on 20 days, compared with 1.83 inches on 9 days in 1905, 2.48 inches on 15 days in 1904, 2.54 inches on 15 days in 1903, 2.58 inches on 21 days in 1902, and 1.20 inches on 10 days in 1901. The maximal fall in 24 hours was .46 inch on the 19th. The average rainfall in May at this station during the 21 years, 1885-1905, inclusive, was 2.09 inches on 13.5 days. Since January 1st, 1906, 11.08 inches of rain have fallen at Cloneevin on 93 days.

The rainfall recorded by Miss Muriel O'Sullivan at White Cross, Stillorgan, was 2.572 inches on 21 days, compared with 1.660 inches on 9 days in May, 1905. The maximum in 24 hours was .601 inch on the 24th, but .510 inch fell on the 19th.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., measured 2.360 inches on 19 days, the largest amount recorded in 24 hours being .545 inch on the 19th.

Mr. T. Bateman, of The Green, Malahide, Co. Dublin, returns the rainfall at 3.174 inches on 19 days, compared with 1.283 inches on 10 days in 1905. The greatest fall in 24 hours was .625 inch on the 19th. The mean shade temperature was 49.7°, the extremes being—highest, 69°; lowest, 32° on the 9th.

At Cork Mr. Wm. Miller returns the rainfall at 3.08 inches on 17 days, or .90 inch above the average. The greatest day's rainfall was .57 inch on the 4th. Up to May 31st, the rainfall of 1906 in Cork amounted to 13.60 inches on 84 days, or 1.36 inches below the average.

The Rev. Arthur Wilson, M.A., writes from the Rectory, Dunmanway, Co. Cork, to the effect that 5.100 inches fell there on 23 days, the greatest fall in 24 hours being 0.95 inch on the 4th in 5 hours. Other heavy falls were .48 inch on the 1st, and again on the 5th, .51 inch on the 23rd, and .58 inch on the 27th.

At the Ordnance Survey Office, Phœnix Park, Dublin, the rainfall was 2.545 inches on 22 days, the greatest measurement in 24 hours being .620 inch on the 19th. The total amount of sunshine during the month was 138.1 hours, the largest daily record being 13.2 hours on the 7th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 50.3°, being 1.5 below the average for May during 19 previous years (1873–83, and 1898–1905); the extremes were—highest, 66° on the 28th; lowest, 36.5° on the 1st. At Bournemouth the mean was 52.0°, the extremes being—highest, 73° on the 8th; lowest, 34° on the 1st. The mean daily range was 10.5° degrees, at Bournemouth it was 13.0°. The mean temperature of the sea at Sandycove bathing place was 47.4°, being 2.2° below the average for the month during the previous 7 years. The average relative humidity was 79 per cent. The rainfall was 2.29 inches on 19 days, being 0.4 above the average for the month during 16 previous years (1873–83 and 1901–05). The greatest daily quantity measured was 0.47 inch on the 19th. The rainfall at Bournemouth was 2.8 inches on 17 days. The duration of bright sunshine was 142.3 hours, being 69.1 hours below the average for May during the previous 5 years. The total duration at Phœnix Park was 138.1 hours; at Valentia, 151.1 hours; at Birr Castle, 117.1 hours; at Southport, 104.3; and at Hastings, 197.0 hours.

MULTIPLE TELANGIECTASES.

Two cases of multiple telangiectases of the skin and mucous membrane of the nose and mouth are recorded (*Glasgow Medical Journal*, June, 1906) by Dr. Brown Kelly, as well as a summary of the eight cases reported by other observers. Dr. Kelly's two cases were sisters, one died of syncope after epistaxis.

PERISCOPE.

NATIONAL COMMITTEE FOR THE ESTABLISHMENT OF SANATORIUMS FOR WORKERS SUFFERING FROM TUBERCULOSIS.

H.R.H. **Helena, Princess Christian**, makes the following appeal to the nation on behalf of this committee, of which Her Royal Highness is president:—In the autumn of last year an appeal was made on behalf of the National Committee for the Establishment of Sanatoriums for Workers suffering from Tuberculosis, with a result so satisfactory that the committee have been able to purchase 250 acres of land at Benenden, in Kent, and are about to commence building operations for thirty patients as a start. The foundation stone will be laid in July next. As further funds are received additional beds will be provided, and the committee earnestly appeal for donations with that object. It is common knowledge that in its earlier stages, consumption is curable, and the National Committee have constructed this scheme on eminently practical lines, the principal point of which is that the Institution, as it is completed, becomes *entirely self-supporting, without endowment from local rates, voluntary contributions or other forms of charitable subscription.* One concrete example among many will suffice to put the scheme before the public. In this first or model Sanatorium provision is made for two hundred beds, and the Postal Federation have guaranteed to support twenty-five beds—over 32,000 of its members having undertaken to subscribe two shillings per annum for that purpose. Other bodies of workers are making similar provision for smaller numbers of beds. Dr. Latham stated at the annual meeting of the Hospital Saturday Fund that in London alone 16,000 *persons die every year from tuberculosis whose valuable lives might have been saved.* This has reference to the disease in its earlier and curable stage, but he computes that no less than 80,000 of our metropolitan population are stricken with it in one form or another. Such a statement made with authority needs no comment to make its impression. If the work of the National Committee is to be carried through, and its righteous and humanising influence and example felt through the length and breadth of our land, their earnest appeal must have a ready and generous response. The committee feel that the scheme of founding *self-supporting* sanatoriums for workers suffering from tuberculosis is the right solution of the difficulty in prosecuting this campaign. Donations should be sent to the Secretary, Special Appeal Fund, Mr. E. Douglas White, 19 South Molton Street, Bond Street, London, W.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on May 16th, 1906, the following gentlemen, having passed the requisite examinations, were admitted ordinary Fellows:—Hirjee Nowroji Anklesaria, L.M. & S., Bombay; Charles Mackie Begg, M.D., M.R.C.P.E., Dunedin; Reginald Bryson, L.R.C.P. & S.E. Captain, Indian Medical Service; John Burdon-Cooper, M.D., Bournemouth; Robert Sturgeon Cocke, M.R.C.S. Eng., London, W.; James Mathieson Kirkness, M.B. Ch.B. Edinburgh; Siavax Byramji Mehta, L.M. & S., Bombay; Victor Edgar Sorapure, M.B. Ch.B., Liverpool. At the same meeting Dr. Robert McKenzie Johnston, 2 Drumsheugh Gardens, Edinburgh, was appointed Secretary and Treasurer, and Dr. James William Beeman Hodsdon, 6 Chester Street, Edinburgh, was appointed Representative of the College in the General Medical Council for five years from 21st June next. The medal and set of books presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William McPhune Bathgate, F.R.C.S.E., Lecturer on Materia Medica in the Extra Academical School, was awarded after the usual competitive written examination in Materia Medica, &c., to Mr. James Hay Johnston, 18 Plewlands Terrace, Edinburgh.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Pleated Compressed Sanitary Towels.—" Tabloid Brand."

Pleated compressed sanitary towels possess several points of superiority over ordinary commercial sanitary towels, and are in every way the most convenient and satisfactory. They are made of materials of exceptional quality, specially prepared for the required purpose, their highly absorbent properties being particularly noteworthy. The delicate texture of the outer covering ensures absolute freedom from the slightest sense of discomfort in use. After being highly compressed each is enclosed in an efficient protective covering, perfect cleanliness being thus secured. The extremely small space which they occupy renders them particularly convenient when travelling. Four sizes are issued—Nos. 1, 2, 3 and 4—of which No. 4 is the largest. Each size is issued in packages of one dozen. They have been introduced by Messrs. Burroughs, Wellcome & Co., of London.

"*Enule*" *Gall and Opium.*

MESSRS. BURROUGHS, WELLCOME & Co., of Snow Hill Buildings, London, have introduced an improved suppository, to which they have given the name of "enule" gall and opium. It presents an effective and convenient means of prescribing opium with the astringent principle of galls in the form of a suppository. Each "enule" contains extract of opium gr. ¼ (0.016 gm.), and tannic acid gr. 3 (0.194 gm.), equivalent to gr. 5 (0.324 gm.) of galls. In hæmorrhoids, rectal ulcer, fissure, congestion of the mucosa, rectal discharges, &c., the employment of the "enule" product is preferable to the use of ointment or ordinary suppositories. "Enule" suppositories are of the improved shape by which insertion is facilitated and expulsion rendered practically impossible. Each is enclosed in a protective covering of pure tinfoil, which is easily stripped off just before use. "Enule" gall and opium is issued in boxes of 1 doz.

"*Tabloid*" *Sodium Citrate, gr.* 2 (0.13 *gm.*).

DIFFICULTIES associated with the digestion of artificially prepared foods by infants frequently come under the notice of the medical practitioner The necessary modification of cow's milk by dilution and sweetening to approximate human milk is often inefficiently carried out by the mother or nurse. Consequently the infant may develop gastro-intestinal symptoms as a result of its inability to digest the food administered. The digestibility of cow's milk is greatly assisted by the addition of sodium citrate. The explanation of the action which is commonly given is that the acid caseinogen and the calcium salts of milk in presence of the gastric juice form a thick casein clot. If sodium citrate be added to the milk, it combines with the caseinogen to form a sodium compound less dense and more absorbable than the calcium caseinogen compound in the normal milk clot. The calcium salts in the milk unite with the citric acid of the sodium citrate, and the resultant calcium citrate is diluted by the stomach contents and absorbed. Thus the introduction of sodium citrate increases the digestibility of cow's milk in a remarkable manner, allows the absorption of the calcium salts, and greatly enhances the food value of the milk. The milk so modified is also a valuable antiscorbutic. This method of treating milk is employed in all cases where there is reason to believe that the nourishment of the infant is unsatisfactory, and is of great value in cases of poor patients who cannot carry out more complicated instructions regarding the modification of cow's milk. It is indicated when the mother's milk does not suit the child, and also in the procsss of weaning. It is used to enable the amount of milk given in 24 hours to be increased. It is valuable in arresting or avoiding milk dyspepsia and the rickety condition seen in many hand-fed children. The cheapness of this method of milk modification is a feature to be emphasised. It is directed that one to two grains or more of sodium citrate be given in each ounce of milk. One "Tabloid" product should be dissolved in about one drachm (teaspoonful) of water and added as required to the milk. The product should not be added directly to the milk. "Tabloid" Sodium Citrate, gr. 2 (0.13 gm.) is issued in bottles of 100 by Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C.

Eucaïn Lactate.

Of the salts of eucaïn the lactate is the most generally useful. In anæsthetic power it is equal to cocaïn salts, but is non-toxic, non-irritating, and does not constrict the blood vessels or dilate the pupil. It is extremely soluble, 20 per cent. solutions being readily made with cold water. The stability of its solutions is such that they may be sterilised by boiling without undergoing decomposition. Two per cent. solutions are used for ophthalmic purposes, and for laryngoscopy and rhinoscopy; four to eight per cent. for the nose previous to the use of the galvano-cautery; six to eight per cent. for removal of tonsils; and two to four per cent. for catheterisation and for endoscopic examinations. In dental work, two per cent. solutions are commonly used. In general surgery, eucaïn is used as a local anæsthetic by hypodermic injection of four per cent. solutions. Though the strengths of solution here indicated are those commonly employed, yet on occasions 20 per cent., and even much stronger, may be desirable. The following preparations are issued by Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C.:—"Tabloid Hypodermic Eucaine Lactate," gr. 1/3 (0.022 gm.) and gr. 1 (0.065 gm.) in tubes of 20.

"Soloid Eucaine Lactate", gr. 1 (0.065 gm.) and gr. 5 (0.324 gm.) in bottles of 25.

Renaglandin—(Anæsthetic).

THIS preparation consists of renaglandin, the pure concentrated aseptic preparation of the suprarenal gland, which contains all the active principles in natural solution, and to which 5 per cent. of eucaine has been added. This preparation is made in Britain. The scope for its employment as a vasoconstrictor is boundless, bleeding from the smaller vessels being entirely checked, and hæmorrhage from large trunks markedly diminished. Its use is also indicated in operations about the naso-pharyngal vault, in aural operations, in uterine work by the employment of a tampon soaked in the solution, while in anæsthetising the female urethra it is conveniently applied by means of a swab. The amputation of a finger can be painlessly performed. In dental operations it is also invaluable. Anæsthetic renaglandin is supplied in bottles containing 1oz. at 3s. 6d. per bottle. Aseptules are small hermetically sealed glass containers. The contents are absolutely sterile, and are presented in an ideal form for hypodermic application. When required for use the body of the aseptule is caught in a towel or any convenient fabric between the thumb and forefinger of the left hand, the same digits of the right hand being used to bend the top, which is easily snipped off at the mark on the neck, without any splintering of the glass. The hypodermic syringe can now be filled direct from the tube. Aseptules of renaglandin anæsthetic—each containing one fluid drachm—are packed in boxes of one dozen aseptules, price, 7s. 6d. per box. Anæsthetic renaglandin and aseptules of the same are to be had from all dispensing chemists or direct from Messrs. Oppenheimer, Son & Co., Manufacturing Chemists, 179 Queen Victoria Street, London, E.C.

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PART I.

ORIGINAL COMMUNICATIONS.

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Art. IV.—*Clinical Report of the Rotunda Hospital.*[a] By E. Hastings Tweedy, F.R.C.P.I. (Master); and Arthur Holmes, M.B., B.Ch., B.A.O. (Assistant Master).

In presenting my report for the year 1904-5, it is with the utmost pleasure I announce the important structural addition to our hospital at present in process of erection. This addition—which was foreshadowed in my previous report—has become necessary because of the enormous increase in the number of patients who annually seek relief at our hands.

The problem presented to the Governors of the Hospital was a serious one, involving as it did either the curtailing of the usefulness of the charity by limiting the number of admissions, and by permitting the hospital to lack the essentials necessary for an institution which justly claims to be the premier maternity hospital in the British Empire, or to embark in extensive structural alterations. Between these alternatives the Governors did not hesitate, and the friends of the charity may rest assured that, as a result of their wise decision, the hospital will continue to maintain the high position it has hitherto occupied in the obstetrical world.

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[a] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, May 25, 1906.

The site selected for the addition to the building has given rise in some quarters to a certain amount of uneasiness, lest by the necessary interference with the symmetrical lines of the old building its architectural appearance would be spoiled. In order to mitigate this as far as possible the annex will have a frontage of granite, and will follow the curve of the old colonnade on whose site it will stand. A little consideration of the subject will show convincing reasons for the choice of this site.

Our Charter restricts us within narrow limits in respect to the ground on which we can build, and there is no other space available where an addition so large as this could be erected without gravely interfering with the light and ventilation of portions of the present hospital. Moreover, the removal of the old colonnade was much to be desired from a sanitary point of view. Its foundations have largely served for those of the new building—the construction of which will be still further cheapened by the utilisation of three separate walls, portions of the existing building and by the avoidance of a main staircase. Experts calculate that this saving in the initial cost has amounted to £1,000, and the gain in administrative economics will be still greater.

When completed it will increase the accommodation of the hospital by two large maternity wards, will supply us with ample isolation wards, with a special room for the delivery of infective patients, with a suitable disinfecting chamber, and will enable us to increase our nursing staff and supply them with adequate room. These, together with comfortable quarters for the lady students, are among the many advantages that will accrue to us.

It is within the recollection of all acquainted with the hospital that our maternity beds are of a very antiquated pattern, and date from a period when it was not an uncommon practice to place two patients with their babies in one bed. These beds have long been a source of anxiety to successive Masters. Their width precludes the possibility of placing cots beside them, and, as a consequence, the child has to be placed in bed with the mother. Many disadvantages follow from this—amongst the least of which may be mentioned that the infants are irregularly fed, and occasionally suffer from infective enteritis, the result of the mother's dirty fingers or her pocket-handkerchief in contact with the child's mouth.

Of graver consequence must be recorded the sudden and mysterious deaths which are from time to time observed to occur in apparently healthy children. It is absolutely certain that in some instances these deaths are accidental, the result of overlying; but the fact that an undue proportion of them is found to occur among illegitimates compels the suspicion that accident is not the factor in every instance. For these, among other reasons, we have made a serious effort to make good our deficiencies in this respect.

I have to record our indebtedness to our Lady Superintendent, Miss Ramsden, for her painstaking and successful efforts to obtain a thoroughly satisfactory bedstead that we have adopted. It is strongly made, of a good appearance, and is possessed of a lever and rachet arrangement for elevating the head for purposes of more efficient lochial drainage. A wire cot for the infant is slung between uprights at its foot extremity, and a wire-woven shelf beneath this cot serves as a receptacle for the day and night quilt. It is also claimed by the makers that sagging is entirely prevented by their special arrangement of springs. This bed is thoroughly aseptic in construction, and strongly built. It can be procured for the sum of £6, inclusive of mattresses and bedding, from the firm of John and Joseph Taunton, Ltd., Shelbourne Road, Birmingham, the bedstead and cot alone costing but £3 10s. So far we possess only eight such beds, presented by different friends, the name of the donor appearing on a neat brass plate above each bed. I trust that my next report will record that all the old bedsteads have been superseded by these new ones.

A further increase in the number of women delivered in the hospital is noted—the figures now amounting to 2,241 admissions and 1,904 deliveries. In my last report I commented on the surprising and steady increase in the number annually treated by us, and it is with pleasure I record the fact that, taking the intern and extern maternity together, the numbers this, together with last, year constitute a record for any similar period since the foundation of the hospital. The number of admissions were more evenly distributed throughout the months than during the former year, with the result that at no time did we suffer from the great overcrowding recorded in my last report. Partly owing to this, but chiefly, I believe, as a result of the introduction of better aseptic methods, our morbidity has fallen from 10.70 to 6.67 per cent., and our mortality from 13 cases to 6.

Our aseptic methods were fully set forth in my former report, and as nothing has been added to or taken from them they need not be again described. It is sufficient to say that they have worked with efficiency, and have justified their adoption and continuance in every detail.

In concluding my general remarks I have to express my indebtedness to the medical, surgical, pathological, and nursing staff for their painstaking and enthusiastic cooperation; and to Dr. Arthur Holmes, my senior assistant, I am particularly indebted for the admirable manner in which he has compiled the more important portions of this report.

EXTERN MATERNITY.

In the Extern Maternity 2,178 women were delivered, with a maternal mortality of eight.

There is a strict rule that all serious cases in the extern maternity are to be advised to enter the hospital if by so doing they can in any way benefit by the greater resources of the institution. This rule does not apply to septic conditions, but even these are not infrequently admitted to the gynæcological hospital.

CAUSE OF DEATH.

Septicæmia	4	
Post-partum hæmorrhage	2	
Ante-partum hæmorrhage	1	
Supposed embolism	1	(pulmonary)

In the cases of *post-partum* hæmorrhage both patients had lost a considerable quantity of blood before help from the hospital was sought.

The following are some interesting cases treated:—

Case I.—C. H., 2-para, aged twenty-five, in labour at seven and a half months; the head and foot presented and engaged in the brim; on the birth of the child it was found that the infant's ankle joint was dislocated as a result of strain and pressure; reduction was easy, and further progress uneventful.

Case II.—E. L., aged forty-four, 13-para, placenta prævia. During the process of combined podalic version the placenta became completely detached, and was expelled through the vagina. The child was rapidly extracted, but the patient, who had lost a considerable quantity of blood, did not respond to stimulus, and died shortly afterwards.

Case III.—M. H., fourteen days after the onset of typhoid fever, gave birth to a living child at full term. Both child and mother showed a positive Widal reaction, and the former suffered from markedly œdematous condition of the arms.

Case IV.—Difficulty having been experienced in the extraction of the aftercoming hydrocephalic head of a child, which presented by the breech, delivery was expedited by perforating between two cervical vertebræ and the drawing off the cerebro-spinal fluid by means of a catheter passed into the cranium through the spinal canal.

Case V.—An infant delivered in the extern maternity was sent into the hospital on the third day because of imperforate anus. A probe passed through the anal orifice to the extent of two inches. No bulging of the bowel could be felt at the roof of this cul-de-sac, and it was deemed advisable therefore to explore the condition by an abdominal section. A very atrophic condition of the large and small intestines was found extending from below Meckel's diverticulum. The large intestine in some portions had the calibre of a pen-handle, and contained a quantity of hard scybala. Near the sigmoid flexure the lumen ceased, the bowel being represented by a fibrous cord. An enterostomy was performed, and the child, though at first much relieved by the operation, died of inanition on the third day.

INTERN MATERNITY.

HYPEREMESIS GRAVIDARUM.

There were two cases of hyperemesis.

In the first—that of a primipara, 7½ pregnant—the type was severe, the vomiting continuing for nine days, sleeplessness and constipation being well marked. The treatment consisted of complete abstinence from food by mouth for three days, with rectal purgation and saline enemata. At the expiration of that time small quantities of peptonised whey and then of milk were administered and retained; ordinary hospital diet could be digested by the ninth day after admission, at which time she fell into labour, and was safely delivered of a macerated child. Recovery was uninterrupted.

In the second case—a multipara at term—obstinate constipation was also a marked symptom. Similar treatment was adopted, and the woman fell into labour in forty-eight hours, with a similar result as in the former case.

Auto-intoxication appears to us by far the most usual of the causes which account for this malady, and the treatment directed towards the dilution and excretion of this poison gives results which may well afford us satisfaction.

ECLAMPSIA.

A most important communication on eclampsia appeared in the *Münchener medizinische Wochenschrift* for December 15, 1905, by W. Liepmann, First Assistant to Professor Bumm, of Berlin. The author makes it evident that a poison closely associated with the eclamptic condition is present in the placenta, and is probably formed in that structure. Further, that this poison is not contained in the blood or other secretions of the body, but is firmly fixed by the nerve tissues and liver cells.

In a paper read before this Section by me in 1893 I argued that this locking up of the poison in the solid tissues must occur, and it was absurd to suppose that any appreciable amount of it could be removed from the system by blood letting. It is a matter, therefore, of personal congratulation that convincing proof has now been adduced of this.

Professor Bumm claims that the rapid emptying of the uterus will prove successful in curing the eclampsia if the operation is undertaken soon after the first fit. His statistical tables are open to the grave objection that all cases are not included in his percentage of mortality. He has had but one death in a series of 71. We are not informed, however, whether these comprise all the cases seen or only those in which operative treatment is deemed suitable. The Professor's mortality before the employment of immediate delivery is given as 30 per cent.—a percentage extraordinarily high as compared with the experience of others—and these disastrous figures place his present statistics by contrast in a more favourable aspect. He is not alone in recording a long series of successes, nor is he the originator of accouchement forcé, for others have adopted a similar expedient with very dissimilar results.

It is strange, too, if all the patients in his recent series were admitted at a period sufficiently early to make his treatment effective, for if they were not all recent cases, then an element of chance acknowledged by him has aided in procuring results which cannot be maintained.

At a recent meeting of this Section Dr. de la Harpe presented a report on a series of seventy-one eclamptic cases treated by morphin and the expectant method, with a mortality of 16.9 per cent.—statistics which include all patients seen in puerperal convulsions within recent years at the Rotunda Hospital.

Since my appointment to the hospital many points of detail in the expectant treatment which appear to me highly important have been added, and of twenty-five patients personally treated I have lost but two, both of which fatalities are fully described in this report. Were I inclined to eliminate any type of puerperal convulsion from this series I might be pardoned did I do so in respect to the first, if not in respect to both the fatalities. I strongly feel, however, that statistics of eclampsia should be arranged in a consecutive series, and should include all known forms of convulsions dependent on the pregnant state.

If this is not done it is easy to persuade ourselves that a certain number of fatal cases should be grouped under the heading "uræmia" rather than eclampsia. In the meantime, our total mortality of 8 per cent. is sufficiently encouraging to permit us to hold our hand until further developments.[a]

Case I.—See Maternal Mortality Table.

Case II.—E. A., 2-para, aged twenty-six, admitted January 3rd, 9 30 p.m., with a history of four fits, which had begun five hours before admission. Half a grain of morphin had already been given, and the patient was deeply comatose. Labour started in two hours, and three more fits occurred before 12 20 a.m. A further quarter grain of morphin was administered, and the stomach was washed out by means of a stomach pump, enemas were administered, and saline injections given beneath the breast and per rectum. She delivered herself of a macerated fœtus at 11 a.m. No more fits occurred, but the patient remained unconscious for thirty-six hours after the birth of the child. Further recovery was uneventful.

Case III.—B. B., primipara, aged twenty-eight, admitted, with marked œdema of the legs, on January 7th. At 12 15 a.m. on the 8th a fit occurred just as labour had started, and another followed in half an hour. Castor oil, saline injections, stomach lavage, and morphin injections constituted the treatment adopted; up to 3 10 p.m. fits continued at intervals, and at this hour forceps were applied to the head, which pressed on the perinæum, a living child being extracted. One and a half grains of morphin had in all been administered up to the completion of the third stage, and at 5 30 p.m. the respirations had fallen to seven per minute, showing a condition of morphin intoxication; this called for artificial respiration, hypodermics of atropine, and saline infusions. Ten fits took place before the birth of the child, one during the third stage, and one eleven hours after delivery. In nine hours from this time the patient regained consciousness, but albuminuria, which was present to a marked degree on admission, had not entirely disappeared when the patient left the hospital.

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[a] Since this was written another successful recovery from eclampsia treated by this method is to be recorded.

Case IV.—M. S., primipara, aged twenty, delivered January 8th of a macerated and premature fœtus. Six hours after delivery three fits occurred in rapid succession. Treatment as above relieved the symptoms, and no more convulsions occurred for forty-eight hours. At the expiration of that time a relapse took place, three fits following, these again yielding to treatment. From this time the patient's convalescence was uninterrupted, but albumen was present in her urine on the day of her departure from hospital.

Case V.—A. G., primipara, aged twenty-nine, with a history of five fits before admission, which were followed by three more within half an hour of her entering the hospital. Despite the administration of three-quarter grain of morphin, given in divided doses, six further fits followed. Labour set in the following morning, and the patient, in a condition of deep coma, was delivered in one hour of a five and a half months' fœtus. No further convulsions occurred, and the urine, which was very scanty and loaded with albumen, rapidly became normal in amount, and contained only a trace of albumen on the ninth day after delivery, when the patient left the hospital.

Case VI.—M. B., primipara, aged twenty-seven, delivery normal in every way, as also was the puerperium until the fourth day. Eclampsia then started, the urine was highly albuminous, and diminished in quantity. Nine fits occurred in all. The patient was discharged on the ninth day cured.

Case VII.—M. B., 9-para, aged forty-two, normally delivered, May 26th. She had a history of mania following her last delivery. On the fourth day of the puerperium the patient complained of headache and dimness of vision, her pulse rose to 112°, and this was followed by the occurrence of three fits. In forty-eight hours the patient had a relapse, and seven convulsive seizures were included in this attack. Pulse and temperature again rose, and they did not fall to normal until the twenty-third day after delivery, when the patient was discharged cured. Albuminuria was present throughout the eclamptic seizure.

Case VIII.—See Maternal Mortality.

Case IX.—L. M., primipara, aged twenty-two, admitted, because of eclampsia, from the extern maternity. Three fits had occurred, and the patient was well advanced in labour. Forceps were applied, and constitutional treatment adopted; there was no recurrence of convulsions, and the albumen present in the urine on the first day had totally disappeared at the period of her leaving the hospital.

Case X.—M. N., 5-para, aged thirty-eight, admitted from the extern maternity with a history of seven fits. Labour had started, and natural delivery of twin birth took place six hours later. Fits did not recur for sixty hours, at the end of which time she experienced six convulsive seizures, followed by twenty-four hours of deep coma, and after this considerable mental derangement for several days. Convalescence was still further retarded by an attack of pneumonia, but this, together with the œdema and albuminuria, both prominent conditions of her disease, had entirely disappeared before the patient left the hospital on the thirteenth day.

Case XI.—M. W., 2-para, aged twenty-three, admitted, September 18th, with a history of from twelve to sixteen fits during the twelve hours previous to admission. The next morning the patient was very maniacal, and sleeplessnes, which was a marked symptom, was overcome by bromides and chloral in large doses. On the following day the mental condition had improved, and the woman, falling into labour, was easily delivered of a macerated fœtus; her urine was highly albuminous, and Dr. F. C. Crawley, who kindly examined her eyes for us, reported that marked neuro-retinitis was present. The patient left the hospital on the twelfth day free from albuminuria.

Case XII.—M. P., primipara, aged twenty-seven, admitted in a deeply comatose condition, with pregnancy advanced to the thirtieth week. She had five fits before admission, the urine was scanty and loaded with albumen. The usual treatment was adopted, and no further fits took place, consciousness returning in eight hours. She left the hospital on the seventh day with but a trace of albuminuria, and was delivered of a living child at her own home six weeks subsequently, no further trouble being experienced.

HYDRAMNIOS.

Of our eight patients suffering from hydramnios, five showed œdema of the lower extremities due to pressure, and one of these had symptoms of collapse shortly after rupture of the membranes. Cardiac and pulmonary distress were present in another case, and necessitated the induction of labour by puncture of the membranes. The patient delivered herself of stillborn twins, the sac of one of which contained fourteen pints of fluid. Living twins were born in another case. In the remaining case version was necessitated because of the transverse presentation with prolapse of an arm, and a living child was born by natural efforts.

ABORTIONS AND PREMATURE DELIVERIES.

Thirty-nine cases were treated during the year, and call for no special comment.

In all cases where the ós was sufficiently open the ovum was removed by the finger, and in the cases in which the introduction of a finger was impossible a flushing curette was used to empty the uterus.

It is interesting to note the marked decrease in the number of these cases treated as compared with the last year's and that of many preceding years.

ACCIDENTAL HÆMORRHAGE.

There were eight cases of this complication during the year. In two the loss of blood was not great, and no special treatment was called for. In another good labour pains were in progress, and the application of a tight binder controlled the bleeding.

In four the vagina was plugged after the Rotunda method with happy results, and in one forceps accomplished delivery. In this case the child lay in occipito-posterior position with the head low down.

PLACENTA PRÆVIA.

Of this condition only three cases are recorded, and in all the placenta was felt by vaginal examination. Hæmorrhage was considerable in every instance. In two bi-polar version was undertaken, the cases being afterwards left to nature. Both children were born dead. In the third the woman entered hospital because of a sudden and considerable flooding. She was kept under close observation in the hospital for a few days, when labour started, and she delivered herself of a living child without further bleeding.

ATRESIA OF THE VAGINA.

The cervix could not be felt in this case, because of a sharp ridge formed by a contracted vagina in its central portion. The orifice of this contraction admitted only a fine probe. It was gradually dilated by means of mechanical dilators, and gave rise to no further trouble.

PROLAPSE OF THE FUNIS.

The cord was found prolapsed in eleven cases. In one the condition was associated with hydramnios and macerated fœtus. In three others the cords were not pulsating when first felt, and the children were born dead by natural efforts, the vertex presenting in these four cases. In a fifth the breech presented, and the cord was successfully replaced, a living child being born. Success attended combined bi-polar version in two other cases, the os admitting but three fingers in each instance at the period when the prolapse was discovered. One of these cases appears in the table of contracted pelves (*vide* M. C.). In three more the prolapse was discovered during the second stage of labour, and all were delivered of living children—two by forceps and the others by natural efforts. The last recorded prolapse occurred in the case of a woman in whom Cæsarean section was afterwards performed.

RUPTURE OF THE UTERUS.

One case of this occurred in the extern maternity. The patient was admitted to hospital, and ultimately delivered. For details, *vide* Case II., Maternal Mortality.

SPONTANEOUS INVERSION OF THE UTERUS.

The case of this very rare accident arose during the labour of a primipara, who was delivered of a full term child by natural efforts. The patient was attended by our Assistant Master, Dr. Holmes, who found the uterus well contracted at the termination of delivery. Following the advice of Sir Arthur Macan, the separation of the placenta was left entirely to nature, and the hand taken from the fundus, while, at the same time, a close watch was instituted to see that no bleeding arose. In twenty minutes the patient cried out as though in labour, and she declared the pains were as bad as when the child was being born. The placenta and fundus protruded through the vulva, and a hollow was felt over the pubes. A gloved hand was at once passed into the vagina, and the placenta, adherent by a firm attachment to the inverted fundus, was removed.

While this was being done another pain started, and the organ turned completely inside out, its fundal extremity being forced through the vulva.

No difficulty was experienced in its reduction. Neither collapse nor excessive loss of blood followed, and the pain was immediately relieved by the reduction. Furthermore, the puerperium was uneventful and apyretic.

POST-PARTUM HÆMORRHAGE.

Nineteen cases of this condition are recorded—a diminution of ten as compared with last year. In one the type was purely atonic, and necessitated plugging with iodoform gauze. In eight the hæmorrhage was associated with retained placenta, all of which required manual removal. Hot uterine douches were successfully employed in all the other cases.

HÆMATOMA VULVÆ.

The one example of this has already been referred to under the heading Mania.

APPLICATION OF FORCEPS.

There were eighty-two cases which called for the application of forceps. In the majority the indication was undue delay in the second stage. For details, *vide* Table VIII.

INDUCTION OF PREMATURE LABOUR.

Premature labour was induced three times—twice for pelvic contraction and once for tubercular disease of the larynx.

Case I.—S. F., 2-para, aged thirty-three, admitted with a flattened rachitic pelvis with a conjugata vera of 7 c. She stated that her former baby had been delivered by perforation in the country. On November 1st bougies were introduced between the membranes and the uterus, calculation having demonstrated the woman to be in her thirty-third week of pregnancy. On the following day the bougies were changed and fresh ones inserted, but these also failed to induce labour at the end of another twenty-four hours; two ounces of sterilised glycerine were then injected between the membranes and the uterus; labour started some hours after this, and lasted twenty-two hours, when she was delivered of a living child weighing three pounds.

Case II.—E. C., 2-para, aged forty-one, admitted during the thirty-seventh week of pregnancy, with a history of pregnancy having been induced on four previous occasions. The presentation was transverse, and the os admitted three fingers. By means of a Frommer's dilator the cervix was opened to a diameter of 10 cms. This did not induce labour to start, and at the end of twenty-four hours a Champetier de Ribes' bag was inserted, and a traction weight of five pounds exerted on it for twelve hours. It was then removed, and bougies were placed in the uterus; in seven hours labour had started, and when the membranes ruptured a foot presented. This was seized, and a living child, weighing seven and three-quarter pounds, was quickly delivered. The conjugata vera measured 8 cms.

Case III.—E. O'K., 5-para, aged forty-one, four months pregnant. She had developed laryngeal phthisis shortly after the last menstrual period. Dr. M'Evoy, of Blackrock, who brought the patient to me, had previously consulted Dr. R. H. Woods concerning her throat trouble. The latter gave it as his opinion that her chance of cure would be enhanced were her uterus emptied, and both Dr. McEvoy and I concurred in this view. The cervix was opened with Bossi's dilator, and the uterus rapidly emptied of its contents, the cavity being subsequently plugged with iodoform gauze to stay further hæmorrhage. A hectic temperature, present on admission, continued until the ninth day, and then fell to normal. The patient left the hospital on the twelfth day apparently much relieved.

Two points of interest arise in connection with this case:—(1) As to the justification of the operation, the propriety of which for my part I had no doubt of; (2) as to the best means of emptying the uterus in a condition such as this, where shock and loss of blood are factors to be avoided as far as possible. The operation here adopted no longer commends itself to me.

PODALIC VERSION.

Podalic version was undertaken ten times—twice for placenta prævia, twice for prolapse of the cord, and three times for flattened pelvis. In another case hydramnios complicated a cross-birth whilst the remaining cases call for no further comment.

CÆSAREAN SECTION.

This operation was performed four times during the year, and in one case was undertaken for the second time. All the patients recovered without complication of any sort.

CASE I.—A. O'R., primipara, a rachitic dwarf, measuring four feet three inches in height. Membranes had ruptured before admission, but the woman was not in labour. Labour began the following morning, and one hour afterwards the operation was performed; the placenta was situate in front, and was cut through before extraction. The patient nursed her baby from the third day. (Case 2, Table VII.)

CASE II.—M. F., primipara, aged twenty-six, a rachitic dwarf, and unmarried, had been eighteen hours in labour before admission. The fœtal heart was distinctly heard, and steps were taken for the performance of immediate Cæsarean section. The child was dead, but the mother made an uninterrupted recovery. (Case 5, Table VII.)

CASE III.—J. B., aged thirty-four, 4-para, was admitted with a history of three previous pregnancies terminated by craniotomy. She believed herself to be within a fortnight of her confinement, and this view was confirmed from physical examination by us. Measurements obtained by Skutsch's pelvimeter showed marked contraction (*vide* Case 3, Table VII.). Labour did not set in till six weeks after this (a circumstance which, according to Pinard, is not uncommonly met with in contracted pelves, and he accounts for this prolongation of gestation by the fact that the presenting part of the fœtus cannot sufficiently press on the pelvic nerves and ganglia of the cervix easily to excite the labour cycle). The uterus was markedly inert throughout the first fifteen hours of labour, the head showed no tendency to engage, and as a further complication the membranes ruptured and the cord prolapsed. She left the hospital on the thirty-ninth day well, and with a healthy child.

CASE IV.—A. P., 2-para, aged twenty-three, admitted during my absence from hospital on vacation. Her former child had been delivered by Cæsarean section in June, 1900, by Dr. Purefoy then Master. The woman was up to full term, and, this being so, it was decided to operate without waiting for labour to start. My assistant, Dr. FitzGibbon, with the help of Dr. Purefoy, operated. The uterus was rotated to the left in such a manner as to cause the right tube to present, and an adhesion had formed between the uterine and abdominal scars. The child was extracted by opening through the site of the former incision; the internal os was tightly closed, and the subsequent recovery without any complication shows that it is in no way necessary for success that labour should have started. (Case 10, Table VII.)

MANUAL REMOVAL OF THE PLACENTA.

It was necessary to remove the placenta in twenty-six cases—a decrease of ten as compared with last year. In only two was interference due to irregular contractions of the uterus. As above mentioned, under *post-partum* hæmorrhage, eight cases required the operation because of hæmorrhage, and in the remaining sixteen the placenta was firmly adherent to the uterus.

Gloves were worn in this and in all our other obstetrical operations, and it is interesting to note the lessened degree of morbidity which followed on this practice.

HYPOSTATIC PNEUMONIA AND PNEUMONIA.

Case I.—S. F., 6-para, aged thirty-three, sent up from the North of Ireland because of marked œdema and albuminuria. She delivered herself safely of a living child shortly after admission, and her puerperium until the eighth day was uneventful. Her diet consisted during this time of milk, milk puddings, and bread and butter. Pulse and temperature suddenly rose to 100 respectively, and respiration became very troubled. For three days following this she became continuously worse, a marked condition of œdema of the lungs developed, and no hope was entertained as to her recovery. Trinitrin tabloids, amyl-nitrite, and oxygen inhalations were constantly administered with strychnin and other stimulants. Our Consulting Physician, Dr. James Little, was assiduous in his attendance throughout her illness, and we have no doubt that her subsequent recovery was entirely due to his skilful treatment.

Case II.—*Vide* Maternal Mortality, Case 5.

MANIA.

Mania developed in two of our patients. In one *delirium tremens* developed on the second evening after child-birth, and occasioned us much anxiety and trouble until the sixth day. She inflicted some injury to her vulva on the fifth day during a violent paroxysm, as a result of which a hæmatoma formed, which did not, however, materially interfere with her convalescence, and she left the hospital on the eleventh day. In the case of the other woman acute mania started on the sixth day after labour, and on the fifteenth day she had to be removed to an asylum, the disease showing no tendency to improve.

MORBIDITY.

Another year's experience of our method of estimating morbidity has proved most satisfactory, and our charts, which have been designed for more readily recording this morbidity, have been extensively inquired for and copied by many other maternities.

The dark lines on these temperature charts point to the upper limit of normal temperature, and the blank space between the charts is for the recording of a pulse above 140. Temperature and pulse must together rise above the black lines, and remain above them for three consecutive bi-daily takings, or, in other words, for a period of twenty-four hours, before we record the case in our books as morbid. By this we eliminate the transitory and unimportant exacerbations of temperature and pulse which are not infrequently seen in cases to which it would be utterly misleading to apply the term "morbid." Furthermore, we do not take into account the irregularities of pulse or temperature so frequently observed within twenty-four hours of the period following delivery. That this is a better index to the condition of our patient than the plan which formerly obtained is proved by the fact that when our hospital was in an unhealthy state during the year 1903-4 a considerably larger percentage of morbidity was recorded by this than by the older method. Last year, on the other hand, the hospital was singularly free from serious infection, and this is again made apparent by the new records showing a lower rate of morbidity than that which the former would have shown.

It must, however, be confessed that this double index of morbidity is open to the objection that accuracy in recording a pulse-rate is not always obtainable on the part of probationer nurses, and we occasionally see a temperature above the normal line and a pulse record just below it, perhaps, recorded at 89 beats per minute. For purposes of diagnosis we do not hesitate to consider such a case as one in which the double limit has been exceeded, but it may escape, nevertheless, being recorded as morbid, and it is obvious that this will occur more frequently in maternities where looser supervision is exercised.

The advantages as proved by a year and a half's practical experience far outweigh this more or less theoretical disadvantage, and I had the honour to urge its general adoption at the Leicester meeting of the British Medical Association. As a consequence of this, a representative Committee was appointed, who carefully considered the question in all its aspects. As a result of their deliberations, they have decided to recommend to the profession at large a simple, but necessarily arbitrary index of morbidity for statistical purposes alone, and have not in any way bound themselves to the suggestion that this standard includes in its scope all puerperal diseases. They suggest that a temperature which reaches 100° on more than one of the bi-daily takings from the end of the first to the end of the eighth day should be classed as morbid, and that all deaths should be so classed irrespective of a temperature rise.

A proportion of the Committee considered that abortion cases were particularly prone to develop morbidity, and as some institutions did not admit these cases into their wards, it has been suggested that they should be classified in a separate table, and this suggestion has also been adopted.

These proposals, if acted on, will prove, I believe, of inestimable benefit. They will enable maternity hospitals to compare results from statistics computed on similar lines, and will arm us with precise data, so that we can enforce the adoption in practice of means which ensure the smallest percentage of morbidity.

In estimating our morbidity by the above method we find that our percentage works out at 8.77, viz.—167 in 1,904 cases.

It is, further, of interest to note in how many of these operative interference had been undertaken.

	CASE	MORBID
Uterus plugged for P. P. H. ..	1	1
Forceps cases	83	11
Version	10	2
Manual removal of placenta ..	26	6
Breech deliveries	69	6
Abortions	39	2
Plugging for accidental hæmorrhage	4	1
	232	29[a]

(*To be continued.*)

Art. V.—*Notes on the Pygmies in Sickness and in Health.*

By Walter P. Cockle, B.A., M.D. (Dubl.).

"These people are undersized nomads, dwarfs or Pygmies, who live in the uncleared virgin forest (Ituri), and support themselves on game, which they are very expert in catching."

Thus does H. M. Stanley's description of the Pygmies open, as he found them in their home.

I was first called to see these most interesting little people on December 3rd, 1905. They were then appearing at the Empire Hall, Shepherd's Bush, every night. I was much impressed by the appearance they presented at home in their now civilised surroundings. They were dressed in woollen vests and pants only, such as form the ordinary underwear of male clothing. Some were stretched on a mattress at full length, some were sitting tailor-wise before the fire and amusing themselves eliciting a native *refrain* from a bow by twanging the string, the bow being held by the teeth, and the modulations effected by labial movements; others again played at taking aim with bow and arrow or sharpening the arrow head on the poker. There were six of them altogether, two women and four men, and they all appeared quite happy in their new life.

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[a] Total Morbidity being 12 %.

Of the troupe before me, two, a man and a woman, had reached what in their country is considered old age[a]—namely, thirty-five years and thirty-four years respectively. The youngest and smallest, though fully grown also, was Mongongo, a boy of eighteen years; a young woman, Quarki, aged twenty-two years, and her husband, Matuka, formed an interesting couple who with Mafutiminga, a fat boy aged twenty-four years, and not a pure Pygmy, completed the troupe.

The average height[b] of a Pygmy is about four feet one and a half inches. The skin, when I saw them, was decidedly black and rather shiny, but in their own country the original colour was "a rich yellow ivory."[c] There was little hair on the face of even the oldest man, and it was short and curly on the head, cut into fantastic designs by shaving with an arrow head when at home, though they had mastered the use of the razor here. They had holes in the lips and ears, into which ornaments were inserted, such as bits of ivory, bone or wood; and feathers and other light things were twisted into the short hair on the scalp. They also wore bracelets and belts mostly composed of beads and shells and hide. They were all plump, muscular and well-conditioned, with prominent mouths and thick lips, good teeth and flat

[a] "Life Among the Pygmies."—J. J. Harrison.

[b] According to J. Harrison the average height of a Pygmy is from three feet ten inches to four feet five inches. According to H. M. Stanley, from three feet to four feet six inches. I have taken an average from the former's figures.

[c] "In Darkest Africa."—H. M Stanley.

noses. The alæ nasi were so distinct and prominent that, taken in conjunction with the thick point and septum, they rather suggested a double-barrelled gun with an unusually large proportion of ramrod. Their hands and feet were beautifully formed and proportioned, and they spoke with a rather musical voice; and the words seemed to me to be so much alike that their language might consist of one word, different modulations and expressions being used to convey different meanings.

On this, my first visit, I found two of the little band to be ill—Mafutiminga, the fat boy, as he was called, and Amuriape, the old woman, had temperatures of 105° and 104°, respectively, with fine crepitations at the bases of both lungs. By the next day they had developed typical broncho-pneumonia, the woman having a dull patch over the right base behind. The expectoration was very scanty, and the temperatures kept high for a week, when they gradually subsided, and the expectoration became free. I did not see any diaphoresis in either case, even when the temperature was highest, except on the first night, when they were damp and clammy in the armpits. These two made a good recovery, being treated in the usual way—with poultices, a stimulating expectorant, milk and meat-juice diet, a cotton wool jacket, and a steam kettle emitting vapour laden with compound tincture of benzoin.

The woman retained her patch for a considerable time, and her expectoration became muco-purulent later, but it did not contain any tubercle bacilli. There was a mixed infection in which Diplococcus pneumoniæ predominated.

While they were at their worst their chief, Bokani, who is also their medicine man, insisted on being allowed to treat them professionally. This consisted in walking up Mafutiminga, as he lay in bed face downwards. Beginning at the feet he slowly crept sideways up to the head, which he gave a few good squeezes to by leaning heavily on it with one foot, and then slowly returned in the same fashion to the feet again. This was received with much approval and even gratitude by the patient, and they all appeared to feel reassured now their chief had taken the case in hand. At other times he lacerated them over the pectoral or scapular regions with a sharp arrow until the blood came, making scratches an inch to two inches in length. This is a very popular mode of treatment with the Pygmies, who, like our forefathers, believe it is good for everything.

As the man got better he became very restless and even unmanageable, and, indeed, insisted on getting up and going about; he was with some difficulty kept in the room. The woman, on the other hand, was most amenable to treatment, and complied with all that was required of her.

During the first week Matuka and his wife, Quarki, each had a rise of temperature, without any other symptoms, necessitating their remaining away from their performance for one night. Matuka had had acute bronchitis some time previous to this. At the end of this week, however, he, his wife and the two others who were not ill left for Bradford to fulfil an engagement there. I rather feared there would be some trouble at the parting, and leaving the two invalids behind; but I was mistaken, though they all appeared very much attached to each other they recognised that their companions were too ill to be moved, and so left them quite satisfied.

My two patients, Mafutiminga and Amuriape, were making rapid strides towards recovery, when, on Sunday evening, 17th December, I was sent for to see the others who had returned from Bradford that day. There were three of them ill—Bokani, the chief, had a temperature of 104.8°, with a pulse of 104, and respirations 26; Quarki, the young married woman, stated to be "a princess in her own country," had a temperature of 104°, while her pulse was 136, and respirations 44; and Mongongo, the youngest of the band, was in a very serious condition, his breathings were rapid and laboured, and numbered 48 to the minute; his pulse was 118, and his temperature 105.4°.

It was interesting to see how solicitous Quarki's husband was for her welfare. While I was examining her he stood opposite me with an arrow fixed in the bow, which was fully drawn, ready to be released at me if I should hurt her.

Through the interpreter I learned that he had told her to call out to him in such an eventuality, as he was ready to defend or avenge her at any moment. They all three had fine crepitations over back and bases of both lungs, while râles were audible in front. I had them put to bed at once, and once more the steam kettle, stimulating expectorants, poultices and cotton wool jackets were called into requisition. The temperatures and pulse rates had been taken at 6 p.m., and were as stated :—At 10 p.m. the woman's temperature had risen to 105°, its maximum during her entire illness, and it subsided by lysis from this point to normal in ten days; it was taken four-hourly, and the course of the disease was normal.

In the case of Bokani, the chief, the disease also ran a fairly regular course, falling by lysis from the maximum 104.8° to normal in ten days also. The highest pulse rate reached by him was 108, and that of the respirations which, when the temperature was highest, numbered 48 per minute. The woman's quickest respiration was 44, and highest pulse rate 136, when the temperature was 104°, not synchronously with the maximum temperature of 105°.

I have not given these two cases in detail, because, as I said, they ran a fairly regular course, but not so that of the boy, Mongongo, which was by far the most interesting, both because of its extreme irregularity and of its great severity; besides the boy displayed more characteristics than did any of the others. He had more individuality, and altogether diffused quite an atmosphere of interest around himself which was wholly unconnected with the others. I will, therefore, state his case in more detail.

Mongongo's Case.—By 2 a.m. next morning Mongongo's temperature had risen from 105.4° to 106°. I may here observe that this was the highest point it reached, but it was by no means his worst day, and there was no perspiration to be seen or felt at all. From this on the temperature was taken two-hourly.

The temperature for the next thirty hours had gradually fallen 3°, and, notwithstanding the rise to 105° on the 19th, things appeared to be very satisfactory up to 2 a.m. on the 20th, when the temperature had fallen to 99.4°. The pneumonia was patchy, but the crepitations had become sibilant behind, while in front the râles were numerous and very moist. From 2 a.m. to 2 p.m. things began to get steadily worse; the temperature rose to 105°. Dyspnœa became very pronounced, the respirations being 88 and the pulse 160 per minute. He was extremely restless, and was getting very exhausted. He was put on ʒii doses of brandy about every two hours, with ♏ 3 of digitalis alternating.

Oxygen gas was given to him for thirty minutes from 2 p.m. and continued every hour for ten to fifteen minutes. He also had gr. $\frac{1}{15}$ strychnin hydrochloride hypodermically, followed in two hours by 5 gr. of phenacetin. At 10 p.m. still on the 20th he was a little easier, and the temperature had sunk to 104.2°, and by 12 p.m. it was down to 99°, and a little later to normal, but this did not really denote any marked improvement in his condition. His respirations were 70, and his pulse was 112. The fall in temperature was directly in response to the phenacetin. He had two nutrient suppositories of beef administered every four hours.

As the day of the 21st advanced his temperature continued to rise until it reached 105.4° at 6 p.m., the pulse being 160 and the temperature 84. He got either brandy ʒii or digitalis ♏ 3 every hour, and $\frac{1}{30}$ strychnin hypodermically at 1 10 and 9 45 p.m.; 5 gr. phenacetin were given him at 6 30 p.m., and oxygen inhalations were almost continuous from this hour to try and combat the extreme dyspnœa. The pulse was almost imperceptible, and by about 8 p.m. the respirations became typically Cheyne-Stokes in character. So low did respiration become that at one period it would cease altogether, and next, the only indication that the respiratory centre was not altogether overcome by toxins, would be a few gasps, little more than mere openings and closings of the mouth, through which no air appeared to go in or out.

The temperature was now falling and the patient was cold to the touch, though he was rolled in warm blankets with hot bottles and placed before a roaring fire. From time to time he had a little barley water or milk to moisten his mouth, as it was exceedingly dry. By 10 p.m. the temperature had fallen to 101°, and at 2 o'clock in the early morning of the succeeding day it was 97.2°. I saw him one hour later, and he was dozing fairly comfortably, the dyspnœa had in a great measure subsided;

though the respirations were 68 they were comparatively easy, while the pulse, though 112, had force and volume. Altogether his condition had decidedly improved. But how long was it going to last ? After the previous fall and rise in temperature I was naturally suspicious.

By referring to Mongongo's chart it will be seen that by 6 p.m. on the 22nd the temperature had again risen to within two points of 105°, with pulse 120, and respirations 72. Though there was marked dyspnœa there was no Cheyne-Stokes breathing. He was very prostate and restless, but still he had not that appearance of extremity which was so evident the evening before, which, indeed, had been the culminating point, and though he was bad on this evening he was really better.

Again the temperature fell between 6 p.m. on the 22nd and 6 a.m. on the 23rd to normal, this time without any phenacetin.

On the 22nd I substituted strophanthus for digitalis, given in 3 ♏ doses every four hours, and ordered the milk to be peptonised. He took a fair quantity of milk and about two teaspoonfuls of Valentine's meat-juice on this day. The nutrient suppositories had to be discontinued owing to the great resistance he offered to their administration. By the nurses' notes for the 22nd I see that he dozed a good deal on this day, and that when asleep on one occasion his respirations were 56, but increased to 66 on waking.

On the 23rd, and again about 6 o'clock in the evening, his temperature rose to 104°. The condition of his lungs was improving now, the mucus was quite loose, the patches were clearing, and the dyspnœa was quite gone by the 25th. This I estimated was the tenth day of the disease, but again at 6 p.m. his temperature went up, this time to 104°. This suggested that there might be some septic infection, possibly a cerebral abscess, as he also showed a distinctly drowsy tendency at the same time. He had slight otitis media, with a large perforation of the drum, but this was of very old standing and was easily amenable to syringing with boric lotion. Indeed, he had suffered much from a discharge from the ear during the previous summer, I learned from the interpreter. However, the case was not septic, the temperature gradually came down to between normal and 99°, with occasional rises to 100°, which always kept to the old habit of occurring about 6 o'clock in the evening.

The lungs cleared up completely, and he made a good recovery, the duration of the disease being twenty-four days.

I stated at the outset that Mongongo had more individuality than any of his compatriots then with him in London. During his whole illness he never once became subdued, not even when he was at his worst; he never lost any of his manhood, though in appearance he looked quite like a child.

Woe to the unwary nurse who would approach him with some attention which he did not want, for in a twinkling he would shoot a finger into her eye, or put out his hand in the most docile way for his medicine, only to hurl it across the floor, or tear his cotton-wool jacket off and throw it into the fire. These little extravagances were really evidences of approaching recovery. He ate many bananas, which he cooked by placing on the fire in their skins, and, as time went on, he actually became agreeable, laughing at the jokes of the others, which were chiefly made by Quarki and Mafutiminga.

Although they were not all that is ideal in obedience as patients—and especially Mongongo—in health they were good humoured and jolly. They were very fond of children, and, generally speaking, behaved themselves exceedingly well. Both the men and women were very modest before the nurses and each other. It was very remarkable how rapid convalescence was. Ordinarily, one expects to see a patient very weak and pulled down after a long, severe illness, but not so with the Pygmies. Their powers of recuperation are enormous, and, indeed, they would want to be, as I understand their villages are under water for about nine months in the year, when everyone suffers from a chronic cough. They are a very primitive people. Their sport and work alike consists in hunting. They live by hunting, they live for hunting. Their spare time is almost entirely spent in making or sharpening spears and arrows or fitting bows. At home their weapons are usually poisoned, the poison used being a mixture chiefly composed of ants. Each tribe has a chief, who is also their medicine man, and in time of sickness generally scarifies his patient for the purpose of blood-letting. I have already described how he walked up and down a patient in bed.

Epilation of the eye lashes is also largely practised by them. It is a pleasure to the operator and to the subject alike. Indeed, it is considered to enhance the beauty much. Matuka most dexterously removed the eye lashes from his wife's lids in my presence, and was kind enough to offer to perform the same office for the nurse.

Though the Pygmies in health were fairly docile and obedient, still they were well able to take care of themselves should occasion arise. To exemplify this I here give a newspaper cutting which has come under my notice while writing these notes :—" During the performance at Portsmouth last night of the Pygmies who were at the Hippodrome last year, one of the women ran amok and sprang off the stage among the audience. She was apparently annoyed by a boy in the second row who was grinning at her, and before she could be stopped she stabbed him in the face with her spear. The manager of the hall quickly intervened and dragged her away before she could do any further damage." [a] This also goes to show that the Pygmies are not insensible to discourtesy. They are not, however, so sensitive to touch, as I have seen them pick live coals out of the fire to light their pipe with without showing the least discomfort, even pausing in the action to make a remark.

The way they smoke is particularly characteristic. Having lighted the pipe with a few rapid draws they take one great deep inhalation, exhale it slowly, and leave the pipe down—their smoke is finished.

This little band is the first of their tribe to have travelled very far from home, and certainly the first to visit this country. During their sojourn they have amassed a vast amount of experience and presents, and on their return home will, no doubt, reap a great harvest of reverential awe from their fellows as they relate their marvellous stories of travel, and, indeed, each will be a modern Crœsus when it is remembered that a bow and half a dozen arrows will purchase a wife.

[a] Extract—*Daily Mail*, May, 1906.

ART. VI.—*The Stokes-Adams Syndrome.*[a] By T. H. PEYTON, M.B., B.Ch., B.A.O., Univ. Dubl.

IN itself the Stokes-Adams syndrome denotes a group of symptoms which were first described by the famous Dublin surgeon, Robert Adams, and the still more famous Dublin physician, William Stokes. It thus derives an additional interest for this Association from its bearing the names of two such distinguished Irish practitioners, of whom we may justly be proud.

The syndrome (syndrome simply meaning group of symptoms) is characterised by a permanently slow pulse (bradycardia, or brachycardia), ranging from 10 to 40 per minute, occurring in association with recurrent attacks of transient loss of consciousness. Of the few cases which have been recorded the majority have occurred in patients of advanced years, and it has been observed that most of these cases presented an extreme grade of diffuse arterio-sclerosis; this, however, is not one of the essential characteristics of the condition, and was not recorded in the original case described by Adams.

Before proceeding to the example of this condition, which has recently been under observation in the Royal City of Dublin Hospital, I propose to give a short account of the history of some of the cases which have hitherto been described, and shall endeavour to briefly indicate a few of the explanations, which may be offered to account for the symptoms occurring in these cases.

The condition was first described by Robert Adams in a paper entitled "On Diseases of the Heart, with Pathological Observations," which he published in the fourth volume of the Dublin Hospitals Reports in the year 1827.

In it he describes the case of a revenue officer, aged sixty-eight, whom he had seen in May, 1819. At the time of his first visit the patient was just recovering from an apoplectic attack, twenty of which he had had during the previous seven years, and from all of which he had recovered without any paralysis or other indications of the presence of a nervous lesion. Adams was struck by the irregularity of his breathing and the extreme slowness of the pulse, which reached only 30 beats to the minute. He died in November, 1819, while in one of these syncopal attacks, and an autopsy revealed nothing with the exception of an extremely fatty heart, which condition was so marked that the organ consisted almost entirely of fat, except the walls of the left ventricle, where there was a thin line of muscle to be seen in its midst. The valves were practically normal, and were competent.

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[a] Read before the Dublin University Biological Association.

For nearly thirty years after Adams had published this case there does not appear to have been any clinical observations of sufficient interest made to call for publication, so that the condition fell into oblivion until the year 1846, when Stokes published an article in the DUBLIN JOURNAL OF MEDICAL SCIENCE, entitled "Observations on some Cases of Permanently Slow Pulse." One of these cases was that of a man, aged sixty-eight years (the same age as in Adams's case), who was admitted to the Meath Hospital on the 9th of February, 1846. Three years previous to his admittance he had complained of fainting fits, and since that time he had at least fifty seizures. "There was little warning given of the approach of an attack, with the exception that he sometimes felt as if a lump started in his stomach, and passed up the right side of his neck to his head, where it seemed to explode with a noise resembling thunder." He generally associated the onset of these attacks with some circumstance which was likely to impede or impress the heart's action—such, for instance, as a full stomach, a sudden exertion, or constipated bowels. During the attacks he lay perfectly inert, and showed no tendency to frothing at the mouth. The contents of the bladder were not expelled during the period of unconsciousness.

Upon examination, the cardiac apex-beat was felt to be slow, and of a prolonged heaving character. The first sound was accompanied by a soft blowing murmur heard distinctly along the sternum. The pulse-rate was about 28 beats to the minute, and a pulsation was visible in the superficial arteries all over the body. These arteries showed marked arterio-sclerosis. While in hospital he used to ward off attacks by rising upon his hands and knees and holding his head well down. He was discharged from hospital in the March of the same year, but returned in the following June, when it was observed that he had developed definite pulsations in the right jugular vein, it being especially noteworthy that these pulsations were more than twice as frequent as the recognisable contractions of the ventricles as indicated by the frequency of the apex-beat and pulse.

Stokes also records another case, in which the pulse-rate was under 30 per minute, and in which there also occurred repeated attacks of transient loss of consciousness, not followed by paralysis. There was also a valvular systolic murmur.

In these three cases it will be noticed that the pulse-rate averaged about 30 per minute; but one remarkable case has been described in America (a fertile source of all things remarkable) by a physician named Prentiss, of Washington, in which the pulse-rate was as slow as 12 per minute, and he even says it was counted at 5 on one occasion.

I will now read the notes on the case which has recently been under observation in the Royal City of Dublin Hospital, and which I personally had the good fortune of being able to watch, whilst acting as resident pupil under Dr. Parsons:—

C. B., a gardener, aged sixty, was admitted to the Royal City of Dublin Hospital on the 18th of October, 1905, complaining of vertigo and recurrent attacks of long periods of unconsciousness.

Family History.—His father died at the age of fifty-two from some cause unknown, but his breathing was very laboured for some time prior to his death. His mother lived to the age of eighty years, and died of "old age." Three of his brothers are dead—one dying of consumption, another of alcoholism, and the third died in his 50th year from some cause unknown. Patient has four children, who are all alive and well. There was nothing noteworthy about the patient's ancestral history.

Personal History.—Patient's employment usually kept him out of doors, and he enjoyed the best of health. He had an attack of pleurisy when about fifteen years old, and had influenza about eight years ago and again last spring. He was on one occasion stabbed in the leg with a pitchfork. No history of specific disease was obtainable, nor was he subject to rheumatic or gouty pains.

Present Illness.—Up to May, 1905, patient had been feeling quite well, when one day he happened to be stooping down screwing a rose on to a watering-can, and upon rising up he fell backwards, unconscious, remaining in this condition for three or four minutes. He then recovered consciousness, and was helped into his employer's kitchen by two waiting-maids, where he remained seated on a chair for about half an hour. He commenced working in the garden again, but was told by his master that he ought to go home, and he then started to walk home, a distance of about two miles, but he got a lift on a passing car, which brought him within one and a half miles of his house, which he walked. On arriving home he took a cup of tea, and feeling anxious about himself he determined to go into Clondalkin and see Dr. Clinch, the dispensary doctor. He got into a cart which was passing his door, but had only proceeded a couple of hundred yards when he fell back into it unconscious; he was then brought back and lifted out on to a plot of grass outside his house, where he remained until he was seen by Dr. Clinch some time later. Dr. Clinch had him removed on a mattress into the house, and gave him some medicine, expressing the opinion that he might never wake out of his attack. The medicine made him vomit. He remained unconscious from 6 30 p.m. until 12 midnight, when he awoke, having no recollection of what had occurred, but feeling somewhat shaky. He had partaken of a heavy meal of corned beef, potatoes, and two cups of tea on that day at about one o'clock. He stayed in bed for some days. About two weeks later he was stooping to defecate, and upon rising suddenly fell back unconscious again; this attack lasted for only a few minutes. Three weeks later he was working at Lucan, where his work necessitated a good deal of stooping, when one day, at about 6 p.m., he suddenly became unconscious, remaining in this condition for nearly an hour. He was seen by Dr. Clinch, who said he was unfit for work. He walked to a car, and was sent home, and never did any hard work after that. Three weeks later he happened to be sitting down, pulling a few weeds in his own garden, when he fell forwards into them on his face, and knew no more for two or three minutes. About four weeks later, having walked home from prayers, he was seated eating his dinner, when he suddenly fell across the table, and was unconscious for five or six minutes. At about 4 p.m. on the same Sunday afternoon he was sitting on a chair doing nothing, when he fell off the chair, and was unconscious for nearly twenty minutes. These were the first occasions on which he had an attack while seated. About two weeks later he was stooping to tie his boots, when he fell forwards on his face, and was unconscious for four or five minutes. He had thus nine attacks in all. Since about the middle of May he had noticed his breathing rather short when walking, and he pants just before the attacks. His ears sometimes feel stuffed, and he feels giddy just as he is going off; otherwise he notices nothing, and he does not "work" or get "blue in the face" during the fit. He occasionally gets a palpitation of his heart, lasting a few minutes, when he over exerts himself. About March last he complained of pain in his legs, and his right leg used to swell somewhat, which, Dr. Clinch said, was due to varicose veins. He sometimes noticed eructations of wind after meals, but otherwise his digestion has been good.

Physical Examination: Inspection.—Patient was a fairly healthy-looking man, with a moderate colour. His tongue was clear, but the teeth were rather decayed, and many were absent. The outer half of the left eye showed a commencing arcus senilis. A diffuse pulsation was seen over the root of the neck, especially on the right side. His chest presented a thick coating of hair. Breathing was normal, and the cardiac impulse was plainly visible in the normal position. The abdomen and legs appeared normal. Upon flexing the forearm on the upper arm the brachial artery was seen to stand out as an extremely tortuous pulsating cord.

Palpation.—The apex beat was very slow, and somewhat heaving in character—it was in the 5th intercostal space, just inside the nipple line. The chest movements were good, and nothing abnormal was perceptible in the body, except that all the arteries showed advanced arterio-sclerosis. The pulse was regular and full, but towards the end of his stay in hospital an occasional beat was missed. During his stay in hospital the pulse rate varied from 32 to 42 per minute, and was often noticed to change at irregular times. The maximal blood pressure was full, and the minimal blood pressure was felt best under light pressure. The artery was hard and tortuous.

Percussion.—Superficial cardiac dulness normal. Deep cardiac dulness extended 4¾ inches to left of middle line, and about 1½ inches to right. Lung and liver dulness normal.

Auscultation.—There was a loud, blowing, systolic murmur audible over the mitral area, not traceable to the left, or audible in any other region. The second aortic sound was markedly accentuated. The lungs were normal.

Urine (23/10/05) :—

Sp. gr. - 1015
Reaction - Normal
Albumen - Negative
Sugar - Negative
Acetone - Negative.

Temperature, normal.

The patient was brought down to the Physiological Laboratory of the University of Dublin on a couple of occasions, and Professor Thompson was kind enough to take sphygmographic tracings from the radial pulse, and cardiograms from the cardiac apex-beat.

The cardiograms were taken with a Marey's tambour, attached to a recording tambour by means of an air-tight rubber tube; the recording tambour marked the transmitted impulse of the heart on the blackened surface on a revolving drum. Two of the pulse tracings were also taken by this means, whilst others were taken with a Dudgeon's sphygmograph. They all show the infrequency of the ventricular contractions, the time marking being made with an instrument which marked seconds. One of the cardiograms shows a slight wave after the ventricular wave, which may possibly be due to a second auricular contraction, or to an imperfect ventricular contraction.

The symptom which, naturally, presents the most interest in the syndrome is the bradycardia. This symptom has received a good deal of attention, based on the investigations of Gaskell into the physiology of the heart's action.

In the Stannius experiment on the frog's heart, which we have all carried out for ourselves in our practical physiology work, it will be remembered that when a tight ligature is applied to the heart between the sinus venosus and the right auricle, the effect is to stop the beat of the heart beyond the ligature, whilst the sinus continues to beat. If a second ligature is applied at the junction of the auricles and ventricles the ventricle begins to beat, whilst the auricles remain quiescent. This condition is known as "block heart," and is explained by the theory that the action of the heart is really due to a peristalsis, in which the stimulus for contraction is initiated in the sinus venosus, which, later, is represented in the human heart by that portion of the right auricle into which the large veins open; from this the wave of contraction spreads over the auricle, and through the auricular canal (*i.e.*, the part normally within the auriculo-ventricular groove) on to the ventricle.

If the ventricle should become cut off from the auricle, as in the experiment just referred to, it no longer receives the normal periodic stimulus spreading to it from the auricle, but an independent rhythm is originated in the ventricle, possibly from Bidder's ganglion, situated at the auriculo-ventricular junction. This independent ventricular contraction is extremely infrequent, and is really a condition of bradycardia. Gaskell, experimenting on the hearts of tortoises, showed that constriction of the auriculo-ventricular junction produced an independent action of the auricles and ventricles, in which the rhythm of the ventricles was much slower than that of the auricles.

The prevailing opinion of physiologists at the present day is that the impulse to contraction, originating in the auricles, or rather in that portion of the right auricle which represents the sinus venosus of the frog's heart. is transmitted within the muscle tissue of the heart itself to the ventricles. If this is so we should expect to find a muscular connection between the auricles and ventricles, by which the stimulus could bridge across the interval over the fibrous tissue ring existing at the auriculo-ventricular junction. This has been actually shown to exist in the form of a bundle of muscular tissue extending from the right side of the interauricular septum to the interventricular septum immediately below the "pars membranacea," and is known by the name of the "auriculo-ventricular bundle of His." It has been proved by the experiments of Graufner, Tigerstedt, and Erlanger, that constriction, or severance of this band, produces the typical phenomena of "heart block."

If we now turn our attention to the hearts of the cases of the syndrome, which we are considering, we will at once see that the infrequency of the ventricular contractions would be explicable if we could demonstrate the existence of some lesion which would cut off the auricle from the ventricle, and so prevent the transmission of the periodic impulse.

Alfred Stengel, of the University of Pennsylvania, publishes an account of a fatal case of the syndrome in the *American Journal of Medical Sciences*, in which he was actually able to demonstrate a sclerosed atheromatous patch extending to the endocardium, exactly over the bundle of His, where this band passes from the ventricle to the auricle. This patient's heart had shown an absolute independence between the auricular and ventricular contractions towards the fatal termination of the case, the ventricular beats being very much slower than those of the auricles.

In Adams's case the fatty degeneration of the heart was so marked that the necessary block was in all probability present.

Hay, of the Liverpool Stanley Hospital, published an article in last October's number of the *British Medical Journal* on "The Pathology of Bradycardia," in which he mentions a case in which the pulse varied from 17 to 30 beats per minute, and in which an autopsy revealed a stretching of the auricular canal. This stretching may have produced a stretching and constriction of the "auriculo-ventricular band of His," and so caused the "heart blocking."

The question at once arises as to whether the auricles really beat two or more times for each contraction of the ventricle, as one would expect, if the condition is a genuine one of "heart block."

Stokes translated the pulsations occurring in the jugular vein in his case as indicating that this was the case, and considered these pulsations were due to a regurgitation of the blood into the veins, occurring at each auricular systole.

Professor Osler refers to a case in which there was a pulsation visible over the region of the base of the heart in the intercostal spaces. These pulsations were more than twice as frequent as those palpable at the apex-beat, and would appear to have been explicable either by the direct impact of the auricles against the chest wall or by the impact caused by the blood being driven into the right ventricle by the contracting right auricle, the ventricle being in diastole, and so allowing the impact to make itself evident by a slight movement of the overlying chest wall.

It is interesting to note that tracings taken from the apex-beat and jugular vein of Hay's case showed definite waves caused by the auricular contractions, which were more than twice as frequent as those due to the ventricular systole.

In Dr. Parson's case there was a marked pulsation in the jugular vein, but none over the cardiac base; the number of pulsations in the vein, however, fairly corresponded with those of the radial pulse and apex-beat. An X-ray examination of the heart was made, and whilst it rendered the ventricular contraction evident, it did not bring out the existence of a more rapid auricular contraction, if such was present, but this may partly be due to the fact that the region of the base of the heart was not brought out clearly into relief by the rays.

The discussion of the syndrome would be incomplete if it did not include a brief reference to the other symptoms which it comprises.

With regard to the attacks of periods of unconsciousness, it has been suggested that these are due to an anæmia of the brain, owing to a transient heart failure brought on by anything which happens to suddenly throw an increased amount of work upon the heart—as, for instance, rising suddenly into the erect posture, or by any circumstance which would impede the heart's action, such as an overloaded stomach. Hay states that in one of his cases the pulse became imperceptible during a syncopal attack, and this is further confirmed by Stengel. We were, unfortunately, unable to observe our patient during an attack, as he exhibited only the slightest tendency towards faintness on one or two occasions while in hospital.

The arterio-sclerosis, which is so commonly present in cases of the syndrome, is a subject which in itself opens up such a wide field for discussion that I will make merely a brief reference to the condition. The principal point for investigation is whether this condition is primarily due to local changes in the arterial wall or is secondary to an increased tension in the small peripheral vessels, with subsequent compensatory endarteriitis, but such a discussion is quite out of the question in a paper like this.

In the case which I have recorded there does not appear to have been any of the recognised causes of the condition at work, and the only explanation of its existence which I can offer is that it was really due to inefficient material used in the building up of the arteries of the body; yet it must be admitted that the patient's family history does not bear this out.

Though the changes so frequently observed in the hearts of cases of the syndrome have generally been regarded as secondary to a sclerosis of the coronary arteries, and this indeed has been usually present, yet it may be worthy of consideration whether these changes and degenerations are not really due to the same congenital defect in the make up of the tissues of the heart, as in the arteries.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital. No. 3. June, 1906. Pp. 137.

TEN papers are contained in this fasciculus:—

1. *Tuberculosis of the Thoracic Duct and Acute Miliary Tuberculosis*, by Dr. Warfield T. Longcope, the Director of the laboratory. The details of thirty cases of tuberculosis are given in which the process was more or less generalised. Of these, nineteen were typical instances of generalised acute miliary tuberculosis of rapid course. In fourteen of the nineteen cases more or less extensive tuberculosis of the thoracic duct was found. In one case, although the walls of the duct were sound, tubercle bacilli were found in smears from the duct lymph. In eight of the thirty cases the generalised process was subacute or chronic, the course of the disease was protracted, and in only two cases was tuberculosis of the thoracic duct found. Finally, in three cases the tuberculosis was chronic and confined to the lungs and peritoneum. In both of these cases the thoracic duct was sound. The following are the conclusions of the writer:—"Tuberculosis of the thoracic duct is of great frequency in cases of acute generalised tuberculosis. The lesions in the duct, from which tubercle bacilli are swept in great numbers through the lymph to the general circulation, form the starting point for the generalised acute process. In certain cases of acute generalised tuberculosis tubercle bacilli may be found in the lymph from the duct, though the duct itself is not the seat of tuberculosis. In a small percentage of cases of

subacute generalised tuberculosis the duct may also be affected."

2. *Bacteriological Findings in Fifteen Cases of Epidemic Cerebro-Spinal Meningitis, with Special Reference to the Isolation of the Meningo-Coccus from the Conjunctiva and from the Circulating Blood,* by C. Canby Robinson, M.D. The author thus sums up the results of his research:—"In a study of fifteen cases of epidemic cerebro-spinal meningitis the organism isolated from the spinal fluid, circulating blood, pus from the conjunctiva, and from the central nervous system at autopsy, agrees in all respects to the Diplococcus intracellularis meningitidis of Weichselbaum. It was isolated in pure culture from the spinal fluid of the fourteen cases in which lumbar puncture was performed, and is to be considered the causal agent in all cases. This organism was obtained from the circulating blood of two of the four investigated cases, but in only one did it grow on the various culture media. The organism is probably only an occasional invader of the circulating blood. It may be present in the blood for many days during the course of the disease, and does not occur only as an agonal invader of the blood. The Diplococcus intracellularis meningitidis may occur in the pus of purulent conjunctivitis—a complication not infrequently seen in meningitis. It was isolated from one of the two cases which showed this complication in our series. Secondary lung infections with pyogenic organisms are frequent, and a terminal broncho-pneumonia was found in five of the six cases that came to autopsy, all of which showed the presence of pyogenic cocci."

3. *A Study of the Blood in Lead Poisoning, with a Description of the Bone Marrow of One Fatal Case,* by William B. Cadwalader, M.D. Blood counts made in thirty-seven cases of unquestionable lead poisoning showed that neither in the numbers nor in the relative percentages of the white cells does the blood of individuals suffering from lead poisoning show any marked deviation from the

normal. An examination of the bone marrow in a fatal case showed marked hyperplasia of the red blood-forming cells. The author thinks that "while it is possible that lead may have a destructive influence upon the red cells of the circulation, its greatest influence is exerted upon the cells of the bone marrow. Following the slight injury to the marrow cells there is over-production, and, in order to supply the necessary number of red blood cells for the circulation, many immature cells, represented by normoblasts and megaloblasts, are thrown out into the circulation."

4. *A Comparative Study of the Methods of Counting Blood-Platelets*, by W. B. Cadwalader, M.D. By diluting the blood with sodium metaphosphate 1.5 per cent. in 0.8 per cent. sodium chloride solution, and determining the ratio of platelets to red corpuscles, it was calculated that the former average 327,156 per c.mm. These numbers are greater than those got by Helber, whose method is less accurate.

5. *Observations on the Growth of Carcinoma Cells within the Muscle Fibres in Carcinomatous Metastasis to Voluntary Muscle*, by G. Howard White. The carcinoma cells reach the muscle by the lymph vessels. Proliferating in these vessels they involve the fasciculi of the neighbouring muscle bundles, and destroying many fibres, insinuate themselves into the sarcolemma and extend along the course of the bundle longitudinally. "No evidence could be found to support the view that carcinoma cells are carried directly to the sarcoplasm through openings normally present in the sarcolemma, and communicating with the lymph vessels, or through openings which they themselves have made by destruction of the sarcolemma at one point." Three plates illustrate this paper.

6. *A Study of Two Cases of Syringomyelia, with Necropsy, one with Subdural Cyst, Hydrocephalus, and Optic Nerve Degeneration*, by Henry S. Hutchinson. This

paper is a valuable contribution to the literature of syringomyelia, a condition the exact nature of which is still very obscure. The writer's cases and commentaries do not, however, admit of analysis in the few lines at our disposal, but his work well deserves perusal by all interested in nervous pathology. It is illustrated by thirteen photographic plates made from sections of the cord stained by Weigert's method.

7. *A Study of the Distribution of the Eosinophilic Leucocytes in a Fatal Case of Hodgkin's Disease with General Eosinophilia,* by W. T. Longcope, M.D. The patient, a young man, suffered from Hodgkin's disease, and died rather unexpectedly of suffocation, or was, as the author expresses it, "strangled to death." During life a great excess of eosinophilic leucocytes had been found in the blood, and similar cells in large numbers in an excised lymph gland. After death a similar excess of eosinophils was found in the glands and in the neighbouring blood vessels, together with what would appear to be a specific increase in the eosinophilic myelocytes of the bone marrow. It is thought that in this case the eosinophils were not formed in the tumours but brought to them by the blood, and that they were formed in the bone marrow from the eosinophilic myelocytes which were found here in excessive numbers.

8. *The Rôle of the Typhoid Bacillus in the Pulmonary Complications of Typhoid Fever,* by G. Canby Robinson. From a study of three cases the following conclusions are drawn:—"The typhoid bacillus not infrequently invades the lung during typhoid fever. It may invade areas of the lung already the seat of hæmorrhagic infarction and there produce abscess formation and gangrene. The organism may cause broncho-pneumonia. Lobar pneumonia as a complication of typhoid fever is usually due to the pneumococcus. This organism may be present as a general infection in the circulating blood simultaneously with *B. typhosus*. It is probable that both *B. typhosus* and *B. paratyphosus* type B. can produce a massive pneu-

monia, lobar in type. When these organisms are the causative factors the pneumonia is of a peculiar hæmorrhagic character, which may be recognised clinically from the bloody nature of the sputum. The typhoid bacillus is not infrequently found in the sputum of typhoid fever patients with pulmonary complications. This fact should be emphasised in order that spread of the disease by this means may be prevented."

9. *A Comparative Study of Pneumococci and Streptococci from the Mouths of Healthy Individuals and from Pathological Conditions,* by W. T. Longcope, M.D. One of the most interesting points brought out in this laborious research is that during the winter months the distribution of virulent pneumococci in the mouths of healthy persons is much wider than during the spring months, when pneumonia most prevails. It would appear that some persons have always virulent pneumococci in their mouths.

10. *A Note on the Growth of Pneumococci and Streptococci in Blood Serum,* by W. T. Longcope, M.D. In normal serum the pneumococci produce a slight cloud, the streptococci a granular precipitate. The serum remains alkaline. In serum from cases of pneumonia the pneumococci cause, after twenty-four hours, a diffuse cloud with a heavy whitish precipitate, the fluid appears a little thick, and the reaction is from neutral to distinctly acid. The cloud, precipitate, thickening, and acidity increase until the fluid becomes almost semi-solid. The streptococci never caused cloudiness or acidity, but only a fine granular sediment. The reaction with pneumococci is, however, not specific for pneumonia. A similar growth and reaction were seen when the serum of persons suffering from other diseases was employed. It would, therefore, appear that under certain circumstances a substance appears in the serum from which the pneumococcus can form an acid. It is present in pneumonia but disappears at crisis, in general streptococcus and gonococcus infections, in acute articular rheumatism, and in less amount in uræmia and chronic nephritis. So far it has not been found in pul-

monary tuberculosis, in serum of normal persons, or in horse or beef serum. Its nature could not be ascertained. It is not glucose.

RECENT WORKS ON PHYSICAL TRAINING.

1. *On Physical Training in Schools.* By W. P. HERRINGHAM, M.D., F.R.C.P.; Physician and Lecturer on Forensic Medicine at St. Bartholomew's Hospital.
2. *The Influence on National Life of Military Training in Schools.* By T. C. HORSFALL.

Two Addresses delivered before the Medical Officers of Schools Association, February 15th, 1906. London: J. & A. Churchill. 1906. Pp. viii + 12.

THE Medical Officers of Schools' Association have issued many useful pamphlets dealing with educational matters from a health point of view. We doubt, however, if any of the earlier papers were of more importance than those now before us.

1. DR. HERRINGHAM deals with games, physical drill, gymnastics and military drill and rifle practice, as they tend to physical development and the formation of character and *esprit de corps.*

2. MR. HORSFALL speaks of the necessity of inculcating the duties of citizenship—our duty to our neighbour and our duty to our country. Both writers are agreed that "we do not teach boys their obligations as citizens half enough," and that military drill and the handling of the rifle should be taught to boys not only in the public schools but in the elementary schools also.

The student of social conditions as they exist in England to-day cannot fail to have noticed two outstanding realities of grave import to our imperial and national well-being—firstly, the growth of professionalism in sport, and secondly, the usurpation of true patriotism, which involves self-sacrifice, by an insensate pride which gets the length of obtrusive Union Jack waving and no further.

Professionalism, in the case of football at least, has led the masses of the people to take their sport vicariously. Tens of thousands of "sportsmen" assemble to see their favourites play a game which they themselves do not play, to smoke, bet, and criticise, and sometimes to mob the referee!

National pride, which rejoices in the greatness of the Empire, but shies at the responsibilities which Imperialism involves, is not worth much in the face of Lord Roberts' statement that the lessons of the war in South Africa have not been learnt, and that we are to-day in the same condition of unpreparedness as we were in the days before Colenso.

Under our present system the future of the Empire is indeed precarious. If it is not to collapse in the next time of trial, the citizens must set their house in order. No statesman dares to avow himself in favour of conscription, and the only alternative appears to lie in military drill and rifle practice in the schools, and the consequent promotion of self-reliance and a spirit of patriotism which is alive to the duties of citizenship.

The Nature and Treatment of Cancer (*Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer*). By JOHN A. SHAW-MACKENZIE, M.D. Lond. Third Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1906. Cr. 8vo. Pp. xii. + 99.

THE fact that this booklet has already developed so far and so prosperously as to have blossomed into a third edition is the very best proof that its contents have been appreciated by the practitioners of the healing art. The fact that the true specific remedy against the ravages of the horrible disease of cancer has hitherto evaded research—empiric, scientific, atrochemical, and surgical—furnishes ample explanation of the eagerness with which the claim for a new discovery in this direction is pretty sure to be entertained. The author is satisfied that clinical evidence in favour of the glycogenic theory of cancer is increasing in amount, and also that of the relationship between this disease and diabetes.

The only important additions made to the text in the present issue are, as told in the words of the writer in his preface: "With reference to the proteolytic and glycolitic ferments, I have drawn attention in the text to the ferments of the intestinal glands, and noted additional treatment, by preparations of the same, in carcinomatous growths and in cases of diabetes. Furthermore, the natural and comparative immunity of the duodenum and small intestine from cancer, and the slower rate of growth of the disease in the large intestine, would appear to give support to medicinal treatment by means of preparations of the pancreas, intestinal glands, and the bile-salts, alone or combined."

The author impresses upon his readers the opinion which he has formed that the best results of the treatment would be obtained by resorting to it in the early stages of the disease. We should say that this observation would suitably apply to all recognised modes of treating cancer—whether recent or old.

Dr. Shaw-Mackenzie has delivered his message—on one of the most interesting and important of clinical topics—with clearness of diction and confidence of tone. For this he should receive the thanks of all members of his profession—even from the very large proportion who continue sceptical regarding the value of his special treatment, and the soundness of the theory on which it is based.

Hygiene and Public Health. By B. ARTHUR WHITELEGGE, C.B., M.D., B.Sc. Lond., F.R.C.P., D.P.H., Late County Medical Officer of Health for the West Riding of Yorkshire, Chief Sanitary Officer of the West Riding of Yorkshire Rivers Board, Medical Officer of Health for Nottingham, and Lecturer on Public Health, Charing Cross Hospital Medical School; and GEORGE NEWMAN, M.D., D.P.H., F.R.S.E., Medical Officer of Health of the Metropolitan Borough of Finsbury, Late Demonstrator of Bacteriology and Infective Diseases in King's College, London, Author of "Bacteriology and Public Health." New Edition, Revised, Enlarged, and in great part Rewritten. 1906.

THE high standard of excellence for which the series of "Manuals for Students of Medicine," published by Messrs. Cassell & Company, Limited, is noted, is worthily maintained in the tenth edition of Dr. Whitelegge's work.

Much new matter has been added, and the references have been brought down to 1904, while the book has been revised, rearranged, and in great part rewritten.

We note in Chapter VII., on schools, the inclusion of the memorandum issued by the Local Government Board (England) in August, 1904, regarding "Schools and Infectious Disease," and we are tempted to ask what steps have been taken by the corresponding Board in Ireland in regard to the important matter of the spread of preventable disease in the public elementary schools of this country. The issue and circulation of such a memorandum by the central advisory authority on sanitary matters to the managers and teachers of schools in Ireland would, we think, prove of much benefit.

Tuberculosis is concisely dealt with, and the influence of alcoholism and the public-house in regard to the incidence of the disease is strikingly brought out by quotations from Brouardel and Dr. Tatham.

In the section devoted to small-pox, the theory of aerial conviction is adhered to—the experiences of Power in regard to the Fulham epidemic in 1884–5, and of Barry at Sheffield in 1887–8, being corroborated by observations made at Oldham in 1893, Warrington 1892–3, Bradford 1893, Glasgow 1900–01, and in the Orsett Union, adjoining the site of the small-pox hospital ships in the Thames, from 1884 to 1902.

The bacterial treatment of sewage, which is being increasingly adopted throughout the country, is described in principle, and the better known methods are mentioned. A word of warning is, however, given that "if sewage contains pathogenic bacteria, and is then treated by bacterial methods, the effluent cannot certainly be assumed to be safer in this respect than the raw sewage diluted, and therefore effluents should not be passed into drinking-water streams, but on to the land." We think this statement is quite justified in view of the exaggerated opinions sometimes put forward in regard to the method.

The model by-laws which are introduced towards the close of the book are conveniently arranged for reference.

The volume, consisting of over 600 pages, is a marvel of condensation. It is concise, accurate, and readable; not only

is it an excellent handbook for the student in Medicine or Public Health, but practitioners and medical officers of health will find it a handy and reliable work of reference.

As befits a work published by the great firm at "La belle Sauvage," the letterpress is clean and clear, and the binding is excellent.

The Anæsthetic Technique for Operations on the Nose and Throat. Based on Lectures delivered during the Session 1905-6 at the North-East London Post-Graduate College. By A. DE PRENDERVILLE, Senior Anæsthetist to the London Throat Hospital, W., &c., &c. London: Henry J. Glaisher. 1906.

THE special purpose for which the book under review was written is one which must commend itself to all, as of all the various operations performed on the human body those in the region of the nose and throat require special treatment when a general anæsthetic is being given, and the book contains many hints which would be useful to any anæsthetist who has not had special experience in this region.

The author says:—"There is no special portion of the body in which operative work has made more solid advance than in the region of the throat and nose. In recent years the anatomy of these structures has received precise and accurate attention, with the result that there has arisen a school of craftsmen second to none in manipulative skill, whose labours, based on sound conservative principles, have brought about a revolution of methods and of treatment undreamt of by an earlier generation. Specialism in its highest sense was needed for this task, and as it behoved the surgeon to train himself rigorously on set lines, so, too, it came about that the anæsthetist had, in a large measure, to follow his example. Without doubt much of success depends upon a recognition of these facts, and it will, I think, be freely admitted that the more perfect the co-relation between skilled principals the better will be the ends achieved. So much so is this the case, in dealing with manipulative measures about the throat and nasal cavities, that, from the anæsthetic point of view, there seems some probability that in the near future men will devote themselves more and more to limited specialism in this connection." (Pages 2 and 3.)

He goes very fully into the various anæsthetics that may be used, and his conclusion that, except for the very shortest operations, chloroform must be the anæsthetic used, no one can gainsay who has experience of the difficulties of operating with ether alone in these regions.

He goes fully into the various positions in which the surgeon places his patient for operative purposes, and deals very fully with the upright position, as required by some operators.

It is necessary, one must suppose, for an anæsthetist to be willing to anæsthetise a patient in the upright position if the operator requires it, but many authorities condemn this procedure as too full of risk, and it is fairly certain that as time goes on the supine position will be the only one used. Still, his book is of value to anyone who requires to know how to work in the upright position.

One other sentence must be quoted. When speaking of chloroform he says that it is absolutely necessary to induce anæsthesia *slowly, without hurry, and with every regard to the establishment of tolerance in the initial stages.*

He summarises his knowledge of chloroform, in the upright position, into three conclusions, as follows:—

(1) "To *overcome the initial tendency to vagal irritation,* and so to obviate all danger of cardiac inhibition. To this end anæsthesia may be best induced by gas alone, by gas and ether, by ethyl chloride and ether, by ether alone (an unpleasant alternative for the patient, and, therefore, not to be generally commended), or by the C. E. combination.

(2) "To be *exceedingly cautious as to overdosage.* This danger should not arise if due care be taken to maintain an anæsthetic condition, deep enough to control undue movement, but not so deep as to abolish cough reflex. When once narcosis has been well established by any of the methods mentioned above, a small amount of chloro-

form vapour will, as a rule, suffice to maintain an even anæsthetic balance.

(3) "To *avoid haste when dealing with chloroform or the C. E. mixture ab initio.* It sometimes happens that preliminary measures with gas or ether, &c., have not been pushed sufficiently, and that the patient shows signs of returning consciousness, or, at best, is but sub-consciously affected. Then, if we elect to continue with chloroform, we must proceed warily until tolerance is fully established." (Pages 51, 52.)

Essentials of Genito-Urinary and Venereal Diseases. Arranged in the form of Questions and Answers prepared for Students of Medicine. By STARLING S. WILCOX, M.D.; Professor of Genito-Urinary Diseases and Syphilology, Starling Medical College, Columbus, Ohio; one time First Assistant-Surgeon, National Home for Disabled Volunteer Soldiers Central Branch Hospital, and Contract Surgeon in the U. S. Army in the Philippines. With 78 Illustrations. London: W. B. Saunders & Co. 1906. Crown 8vo. Pp. 313.

THIS volume is one of a series of compends issued by Messrs. Saunders & Co. The popularity of the series is proved by the sale of 265,000 copies since its inauguration. The book before us is divided into three parts. The first deals with Genito-Urinary Diseases and Surgery, and consists of 132 pages; the second part devotes 78 pages to Gonorrhœa; the remainder of the volume treats of Syphilis and Chancroid.

The book is an eminently practical work, written in no faltering terms, but with a dogmatism calculated to leave no doubt in the tyro's mind as to the view he is to take of the subject under consideration. Students will appreciate this quality, as it renders intelligible the author's meaning and saves the mental harassing occasioned by a plurality of theories.

Usually books of this catechising description are of use only for testing the knowledge of the student, but in this particular instance the text is sufficiently extended to enable one adequately to master the subject. It also contains a *résumé* of the physiological and anatomical features of the various parts concerned in diseases of the genito-urinary organs.

The terminology is at times somewhat ambiguous. We are told that "perinephritis is an inflammation of the fibrous capsule of the kidney," &c. The next question asks—"What is perinephritic extravasation?" Then we learn that the extravasation is not one in and around the kidney, but "the penetration of urine or blood into the perineal tissue." If this latter definition be correct we should experience some difficulty in defining the correct interpretation of the term "perinephritic abscess."

In treating of gonorrhœa in the female the author makes no mention of pyosalpinx or of salpingo-oöphoritis. This omission may possibly be explained on the hypothesis that Dr. Wilcox does not regard pyosalpinx as a natural sequela to gonorrhœa, but rather one artificially produced by the injudicious use of sounds and douches, or caused by a gonorrhœa occurring late in pregnancy and after abortions. Wertheim has collected statistics of 376 cases of pyosalpinx wherein accurate bacteriological investigation showed that 76 were due to the presence of gonococci. Personally, it is our opinion that this pathological condition rarely, if ever, occurs except under the circumstances alluded to above.

In the differential diagnosis of a spasmodic stricture from an organised one the author states that "there is no resistance to the withdrawal of the sound in the former case." Some surgeons of life-long experience repudiate this test altogether.

In the treatment of syphilis Dr. Wilcox prefers the internal administration of the proto-iodide of mercury in tablet or pill form. He makes no mention of intramuscular injections, though he refers to the hypodermic injection of hydrargyri perchloridum into the subcutaneous connective tissue.

Is syphilis a germ disease? Dr. Wilcox's answer is—"The microscope is yet insufficient to discover the micro-organism which analogy leads us to assert is the cause."

In the April number (1905) of the German Imperial Health Office publication Schaudinn described the Spirochæta pallida which he had discovered in syphilitic lesions, and which has since been recognised by over one hundred independent investigators, one of whom is Professor McWeeney of this city.

Levoditi, of the Pasteur Institute, at a meeting of the Académie de Médecine, Paris, demonstrated the presence of these germs (*Spirochætæ pallidæ*) in great number in the liver of a child who died of congenital syphilis. As may be remembered, M. Metchnikoff had about this time succeeded in inoculating some anthropoid apes with syphilitic secretion; accordingly, Schaudinn sent him a supply of Spirochæta pallida, with the request that he might try the effect of inoculating some chimpanzees with it. Metchnikoff did so in the case of six of these animals, in four of which the experiment was successful, whilst one of the two in which it failed was rapidly recovering from a serum with which it had previously been treated. These results practically prove that syphilis is really a chronic spirillosis.

In conclusion, we refer to the following statement which we are unable to endorse:—"Children with congenital syphilis are immune to fresh infection." We have seen several cases in which this law was disproved, and Jonathan Hutchinson has published others amongst his "Commentaries."

Practice of Medicine: The Medical Epitome Series. By HUGHES DAYTON, M.D. Edited by VICTOR PEDERSEN, M.D.; Instructor in Surgery at the New York Polyclinic. London: Hodder & Stoughton. 1905.

THE volume before us is indeed an epitome, for it embraces a description of all medical diseases within the short compass of three hundred small-sized pages of good print. It is designed for "hasty reference by practitioners, as well as for the use of students," but it is to students alone that it can prove of value. It reminds us more of a grinder's note-book than of anything else, and the short disconnected sentences of which it is composed must surely make it hard to memorise. For a student who likes to have the bare facts of his work presented to him in the shortest possible compass it may prove of value when reading for an examination, and as its small size enables it to be carried in the pocket it might also prove serviceable to the clinical clerk when writing notes on his cases in the wards. The facts within it are derived from standard text-books, more especially from Osler's, and the order followed is the same as in Osler's book. The most we can say for it is that it is good of its kind, and that we have not been able to detect any errors of importance, but we disapprove entirely of the type of which it is one.

"*What is Truth?*" *or, The Gospel of the Christ contrasted with the Gospel of St. Paul.* By a Woman. London: G. Rangecroft & Co. 1905.

THE title of this small book is formed of a question whose solution has a good deal exercised the intellects of high-class thinkers—male and female—from the earliest recorded dawn of human thought, and (probably) very long before. The What (?) of Truth represents a problem characterised by a degree of obscurity of investment strictly comparable to that of the Where (?); and the degree of satisfaction arrived at by the investigator in any case of attempted answer will pretty surely be found to depend largely on his or her confidence in the faculty of introspection. Jesting Pilate asked the same query, on one of the most memorable occasions known to the history of the human race, "and would not stay for an answer" to his own question. The writer of the booklet now before us has attempted to surmount one of the loftiest, and withal steepest, aspects of the domain of eternal verity; and the importance and dignity of her subject have the highest claims for an attentive hearing. The initial sentence opens with the announcement that "the book does not pretend to be a learned one," and proceeds to explain that it "is written merely to suggest a method by which the standard of the Godhead can be raised to a purer atmosphere without in any way altering the fact that he remains the same God that he was before." A cursory comparison of these clauses appears to us to suggest an inconsistency: a volume surely requires a great deal of learning and persuasive reasoning for a satisfactory accomplishment of the very arduous result which is thus announced as the special aim of the writer. The skilled critic and erudite reader will, of course, form their own opinions, both of the efficacy of the means and the degree of approximation to the end. The very fact that in an early sentence of the preface we find an energetic reference to Paul, the Antichrist, is, we incline to think, a sufficient guarantee of the writer's intention to carry the thoughts of her readers far above the level of the terrestrial (and even sublunar) planes of thought and research—into regions where flotation can be maintained, with even an appearance of security, only by skilful adaptation of all the results hitherto obtained by the recognised leaders of criticism—the profoundest as well as the highest. The great object of the reformation of opinion and practice advocated by the authoress is the "Church of England." We are told that "It is a question whether the clergy have not now arrived at the point of loving Paul and his doctrines better than God and His Truth; it needs the sharp knife of the surgeon sometimes to remove a growth." We fully recognise that the growth in question is one of so large dimensions, and furnished with roots so widespreading and so deeply penetrating, that the lady-doctor who undertakes the operation of excision requires the previous training of a prolonged and varied curriculum—something beyond the dimensions of even our own comprehensive quinquennial probation. And our authoress does display a wide range of reading and reference—although her modesty may lead her to disclaim exceptional attainment. The text of her booklet opens with a reference to the revolutionary theory introduced into the domain of stellar science by Copernicus. Then follows the inevitable reproduction of the trial and sentence of Galileo. The writer does not repeat the old vicious untruth that the pioneer astronomer was *tortured* by the Inquisition; but she does not seem to have grasped the fact—which has, indeed, been missed by nearly all English writers on the subject—that the charge against Galileo was more complicated in its technicality than is here represented. He was not contented with mere advocacy of the heliocentric theory of the Solar System, but attempted to turn the tables on his theological critics by asserting that such was the teaching of the Biblical text, and that they had failed to see it. This really formed the head and front of his offending; the theological authorities could not allow such insinuation to obtain currency without challenge. Our authoress seems somewhat hazy in the matter of dates and publications associated with the famous persecution of the great Tuscan astronomer; and, as Galileo possesses claims on the medical profession which are probably unfamiliar to most readers, we will embrace the opportunity of referring to them. The period of his mental training was one of peculiar unrest, and there is no matter for surprise in the fact that his genius displayed iconoclastic tendencies from an early date. His father, constrained by circumstances, wished to make the lad a cloth merchant, but allowed himself to be persuaded to consent to his adoption of medicine as a profession. Accordingly, the future reformer of Stellar Science was, at the age of seventeen, entered at the University of Pisa as a pupil of Andrea Cesalpino, one of the foremost claimants to the credit of the discovery of the circulation of the blood! But the waywardness of genius has proved, in every period of human history, a most unmanageable quantity; and the inspiration of Hippocrates and Galen yielded, in the spiritual yearnings of the youthful Galileo, to the more overwhelming fascinations of Euclid and Archimedes. Yet his characteristically inventive genius bore passing fruit even during its transitory sojourn in the borderland of medicine. The claims which have been advanced by some of his panegyrists in favour of his invention of the first microscope and the first thermometer have been largely discounted. But, at the time of his earliest observations on the isochronism of the pendulum—originally inspired by noticing the oscillations of the swinging lamp in the Cathedral of Pisa—he went on to construct an instrument [shall we call it a *sphygmoscope?*] for the purpose of demonstrating the rate and character of the pulse by winding and unwinding a string with a bob attached to it. This little machine excited a great deal of admiration in the inner circle of the medical profession at the time, and was a good deal employed by Italian physicians for a while.

Our authoress refers the theological troubles of Galileo to his having "openly declared in a work which he published about 1615 A. D., that his discoveries proved the truth of the Copernican theory." The "work" which led to the explosive collision really was a "Letter to Castelli," which he wrote December 21, 1613. This document was denounced to the Inquisition, February 5, 1615, but the result was not so gruesome as some ecclesiastical historians have tried to persuade their readers. Galileo's writings were neither prohibited nor censured; he was let off with a personal admonition, administered at the palace of Cardinal Bellarmine on February 26, that he should relinquish the heliocentric theory of the Solar system, and abstain from advocating it, either verbally or in writing. But such germs must necessarily develop, and in 1632 the epoch-making volume appeared which was destined to open up a new era in human enlightenment. The claims of the author on science in general, and on medicine in particular, form a sufficient apology for a reproduction of the words of the somewhat elaborate title:—

"DIALOGO DI GALILEO GALILEI LINCEO, Matematico Sopraordinaris dello Stvdio di Pisa. E Filosofo e Matematico primario del Serenissimo GR. DVCA DI TOSCANA. Doue ne i congressi di quattro giornate si discorre sopra i due MASSIMI SISTEMI DEL MONDO TOLEMAICO, E COPERNICANO; proponendo indeterminatamente le ragioni Filosofiche, e Naturali tanto per l'vna, quanto per l'altra parte. Con Privilegi. IN FIORENZA, Per Gio: Batista Landini. MDCXXXII. CON LICENZA DE' SVPERIORI."

This handsome quarto volume, printed throughout in italic type, has made intellectual and doctrinal history as few scientific works of man have done, as every reader knows.

From Galileo our authoress passes on to the theologians, philosophers, &c., &c. Her positions are often stated with a tone of dogmatic authority and in forcibly emphatic language. Their degree of cohesion, their mutual relevancy, and their logical sequence may fairly be regarded as displaying aspects amenable to critical discrimination in a large proportion of individual instances. We are told that—"As a matter of fact, We do see God and hear Him speak in exactly the same way that we do a man, but Paul took away the key, and so for two thousand years we have been unable to open the gates of heaven and walk in and out and find pasture, as did the prophets of old. The real key is in our heart, in the true relationship between the sexes. Paul's low idea of woman made him have a low idea of God." Judging from this, and kindred collateral enunciations, we should feel disposed to enter our authoress on our list of "*New* Women." Whether her doctrines will open up a new era in theology and inspiration we do not propose to discuss further. Many are the spirits which are abroad in this democratic and revolutionary age. The principal inspiration we have ourselves derived from this novel book is that it made us renew our old acquaintance with Galileo Galilei—and so far we are grateful to the authoress.

X-rays in General Practice. By A. E. WALTER, Capt. I.M.S.; Superintendent of the X-ray Institute of India. London and New York: John Lane & Co. 1906. Pp. xii + 175.

THIS little book is written for the guidance of the general practitioner and students who are taking up X-ray work. It treats the subject mostly from a practical point of view, but also devotes chapters to more general considerations—viz., "The Effects of X-rays on Bacteria and on Living Tissues"; "Indications for the use of X-rays in Treatment." The first three chapters describe apparatus, and offer suggestions as to their choice, care, and management. The next chapters deal with the taking of skiagrams, photography generally, and the localisation of foreign bodies. Then, treatment by Finsen and ultra-violet light, radium, and high-frequency currents are very briefly discussed. Chapters X., XI., and XII. describe X-ray treatment of parasitic and inflammatory diseases of the skin, lupus vulgaris, tubercular glands and joints, rodent ulcer, and malignant disease. The author, Captain Walter. relates his experience in the X-ray treatment of Leprosy in India, and considers it encouraging as far as he has gone.

The treatise is nicely got up and well printed. It contains forty-seven illustrations, most of which are figure apparatus; twelve are reproductions of skiagrams. "X-rays in General Practice" contains some useful information in a brief and clear manner, which will be found acceptable to the beginner. The chapter on taking photographs is the best in this connection, but it may be pointed out that the distances from the tube to the plate mentioned in the table are not those most frequently adopted.

The Public Health Acts and other Sanitary Laws and Regulations. Specially prepared for the Diploma in Public Health. By Martin Elliott, of the Middle Temple and Western Circuit, Barrister-at-Law; and Gilbert Elliott, M.R.C.S. (Eng.), L.R.C.P., D.P.H. (Lond.), D.T.M. (Cam.). London: H. K. Lewis. 1906. Pp. xii + 168.

Sanitary Law is the bugbear of candidates for the Diploma in Public Health. Following the Public Health Act (England) of 1875 there has been a succession of legislation of a most bewildering and scattered kind dealing with sanitary matters. Added to those enactments of Parliament there are By-laws sanctioned by the Local Government Board which have locally an importance of almost equal magnitude. To collect these various provisions, to free them from legal verbiage, and present them to the reader within a reasonable compass, has been the object of Mr. Elliott in the book before us. It bears the impress of the barrister rather than of the doctor, nevertheless it is not unduly prolix. It is a comprehensive index of sanitary legislation as it stands at the present time. Frequent cross-references are given which should prove of value, and the model By-laws of the Local Government Board for England are added to the work. The special Acts relating to Ireland have been omitted, and, consequently, the work is not of so much use to Irish readers as it might be, but the student who aspires to obtaining the D.P.H. of any of the English Licensing Bodies will find that this book will save him a deal of time in making up his work, and that in it a very dry subject has been made tolerably interesting.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society, chiefly from Original Sources. Fasciculus XXIV. (bis. ter.), being XVII., XVIII., and XIX. of the Clinical Atlas. London: The New Sydenham Society. Agent: H. K. Lewis. 1905 and 1906. Folio.

In the first of these two instalments of the New Sydenham Society's Clinical Atlas we have a pictorial aid to diagnosis in a series of radiographs illustrating fractures and dislocations of the upper extremity. A very curious instance of congenital absence of the carpal end of the ulna is shown in a separate plate, and in another and final radiograph a partial dislocation of the foot backwards in seen to be complicated with detachment of the outer malleolus of the tibia and a fracture of the fibula a little above the middle of its shaft. Hints as to treatment are given in the letterpress descriptive of the injuries. Nothing can exceed the finish and clearness of the several skiagraphs.

Elephantiasis, as it is observed in English practice, is fully represented in a double number of the Clinical Atlas, which contains numerous fine lithographs by Messrs. John Bale & Danielsson, Limited, of London. The other subjects illustrated are symmetrical lupus vulgaris on both cheeks, morphœa herpetiformis affecting the frontal nerve region, an accidental vaccination sore on the cheek, fractures of bones of the forearm, rodent ulcer of both sides of the face, the "potato-like" tumour of the neck, described in the *Practitioner* in 1904, under the name of Endotheliomata of the Carotid Body, by Mr. Hastings Gilford, of Reading; three views of a large tumour in the neck, which may have been lymphadenoma or lymphosarcoma, or an advanced stage of the "potato-tumour" of Gilford; and a terrible case of cicatricial keloid (or, as it should be written, "cheloid") on the scar of a burn by sulphuric acid. Lastly, there are nine figures in two plates illustrating the important discovery of a new blood-fluke of man by Dr. Catto. This parasite, called by Professor Blanchard after its discoverer *Schistosoma cattoi*, whose habitat is the mesenteric vessels, was found in a Chinaman. It closely resembles *Bilharzia hæmatobia*, but differs in certain important characters. The ova are found in the fæces of persons infected by the parasite. The lesions produced are—coarse hypertrophic cirrhosis of the liver and fibrosis of the various viscera affected by the ova.

At the end of each Fasciculus is the usual correspondence. In one of the "Notes" we learn that Dr. Castellani, of Colombo, Ceylon, has discovered a spirochæte not distinguishable from that of syphilis, in the lesions of "Parangi," which is the same disease as that known as "Yaws" in the West Indies. If this discovery is substantiated the conclusion arrived at by the learned editor of the Atlas, Mr. Jonathan Hutchinson, F.R.S., that parangi and yaws are identical with syphilis, will be justified. One thing is certain, and this is that Mr. Hutchinson is the life and soul of the New Sydenham Society.

The Pharmacopœia of the Evelina Hospital for Sick Children, Southwark. Third Edition. London: J. & A. Churchill. 1906. Pp. 62.

After a lapse of ten years the third edition of this useful formulary sees the light. The contents have been carefully revised, and several formulæ have been added to meet the requirements of the present day. The general scheme of the formulary is that the doses are suitable for a child six months old, but some of the prescriptions are intended for the use of older children.

Appended to the formulary are diet tables, receipts for peptonised foods, and nutrient enemata, and a short section on urinary tests.

Landmarks and Surface Markings of the Human Body. By LOUIS BATHE RAWLING, M.B., B.C. (Cant.); F.R.C.S. (Eng.); Assistant-Surgeon, Senior Demonstrator of Anatomy and Demonstrator of Practical Surgery at St. Bartholomew's Hospital. With Thirty-one Illustrations. Second Edition. London: H. K. Lewis. 1905. 8vo. Pp. xii + 96.

IN the number of this Journal for May, 1905 (Volume CXIX., No. 401, page 370), it was our pleasing duty to congratulate the author and to strongly recommend his work to every student of medicine.

The first edition appeared in October, 1904. Twelve months later the second edition was published. For this somewhat belated notice of it we apologise to Mr. Rawling and to his publisher, Mr. H. K. Lewis.

The work is admirably conceived and carried out. It is splendidly illustrated with photographic and coloured plates, to which full reference is made in the text. In five chapters the topography of the head and neck, the upper extremity, the thorax, the abdomen, and the lower extremity is described in terse, clear language. In an appendix of great value the length of various passages, tubes, and organs of the body is given—also the weight of the principal organs. Certain epiphyses and epiphysical lines are alluded to in the text, and the author has consequently appended a table, compiled from "Gray's Anatomy," showing the ossification and epiphyses of the bones of the upper and lower extremities.

Dr. Rawling has not been slow to avail himself of many suggestions offered by critics of the first edition, with the result that there is little to criticise in the book as it now appears.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By Sir Charles A. Cameron, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dipl. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, Harben Gold Medallist, 1903, &c.

DAIRY HYGIENE.

That milk may be the medium of disseminating certain zymotic diseases has been established on the clearest evidence. So far back as 1878 I was able to prove conclusively that 67 persons had contracted typhoid fever by using the milk from a dairy, the owner of which and one of his children were suffering from that disease. Since that year I have published other instances of the spread of typhoid fever through the medium of infected milk. That tuberculosis may be caused by the ingestion of the flesh and milk of bovine animals was generally accepted as a fact until Dr. Koch startled the world by declaring that bovine tuberculosis was distinct from that of man, and that, as he could not succeed in infecting oxen by tubercular matter taken from man, he believed bovine tuberculosis could not be transmitted to man from the ox. Koch's conclusions have been challenged, and results obtained by other experimenters appear to show that human and bovine tuberculosis were the same disease. The experiments now being carried out on the Essex farms of Sir James Blyth have so far negatived Koch's theory.

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[a] The author of this Report will be glad to receive any books, pamphlets or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

Scarlet fever has been proved to be transmissible to man from affected persons, during the stage of desquamation, being engaged in dairy operations. Several outbreaks of septic sore throat have been attributed, with every appearance of probability, to infected milk.

Dr. Secuyer and Dr. Dupré, in the *Bulletin de la Société de Médecine Publique*, 1885, XXV. (Paris), asserted that pleuro-pneumonia in man may be produced from the milk of cows affected with contagious pleuro-pneumonia. There seems little doubt that diarrhœa in children, and perhaps in adults, is caused by abnormal milk. The literature of the relation between milk and disease is immense. In the *American Journal of Medical Science*, New Series, Philadelphia, 1901, Dr. Kober gives his reflections on 380 outbreaks of disease attributed to infected milk.

I have no doubt that milk containing filthy matter sometimes causes illness of ill-defined character, attended sometimes with fever, sometimes with gastric disturbance. In the DUBLIN JOURNAL OF MEDICAL SCIENCE for February, 1882, I gave an account of a fever, of short duration in three children, which seemed to be clearly due to the use of filthy milk. The microscopical examination of the milk showed the presence of cows' hairs, particles of manure, and myriads of monads, vibrios and bacteria. The examination of the cow sheds of the vendor of the milk showed that the cows and the sheds themselves were very filthy. That decomposing organic matter in milk may give rise to septicæmia is readily conceivable.

In the preparation of the food of man the most scrupulous attention to cleanliness is essential. This is especially the case as regards milk, butter and cheese, but there is evidence to show that, as regards these important articles of food, little regard to cleanliness too often prevails. The dairy, its equipment, and those engaged in it, should be kept thoroughly clean. The hands should not come in contact with milk or cream. The vessels should be thoroughly cleansed immediately after use, first with cold, then with hot, water. No sinks or drains should be inside the dairy. Its windows best face the north in order to avoid the sun's direct rays in summer. It should be situated as far from the cow-sheds and manure pit as possible. As regards the cow-sheds, they should be well ventilated and lighted. The sanitary authorities have power to make by-laws for the regulation of cow-sheds and dairies, but in Ireland very few of them have enacted such by-laws. In the code adopted by the Corporation of Dublin personal hygiene is insisted upon. Provision must be made for supplying means of washing the hands of the milkers, and a penalty for having dirty hands whilst milking may be, and often is, enforced.

The Lord Lieutenant's Commission, which in 1901 inquired into the sanitary condition of Dublin, were satisfied that the Dublin cow-sheds were kept in a cleaner condition than was the case in the farms from which milk was sent into Dublin. I cannot, however, say that, even as regards Dublin, the state of the cow-sheds and their immediate surroundings is quite satisfactory. Some of them are well kept, but others, especially those owned by persons having only small numbers of cows, are far from being ideal dairy yards. Efforts are constantly been made to induce the owners to keep the cow-sheds and yards clean, and to see that their employees keep themselves clean. From a hygienic point of view it is desirable that the milk business should be in the hands of persons possessed of a fair amount of capital. The best kept dairy establishments in Dublin are those of the men who do business on a large scale. They can afford to construct proper sheds and to employ the better kind of assistants. In the case of the poorer class of dairymen, they have not the means of carrying out the structural improvements of their premises required by the sanitary authority. As the result of sanitary supervision, the Dublin dairy yards have been greatly improved. The Corporation of Dublin has enacted an excellent code of by-laws relating to dairy yards and milk stores and shops. The inspection is carried out by a chief inspector and three assistants. For many years I gave much of my time to the inspection of dairy-yards, which, though fewer now than formerly, are still very numerous.

Some years ago certain duties in connection with the administration of the Diseases of Animals Act were transferred from the Boards of Poor Law Guardians to the Corporation of Dublin. Mr. Andrew Watson, M.R.C.V.S., who had been the Veterinary Surgeon of one of the Boards of Guardians in connection with the Diseases of Animals Act, came over to the Corporation. Mr. Watson was not an all-time officer of the Guardians, and practised privately as a Veterinary Surgeon. I suggested that his exclusive services should be secured so that he might discharge duties requiring veterinary knowledge in addition to those in connection with the Diseases of Animals Act. Mr. Watson was duly appointed Veterinarian to the Corporation. Beside the work of the Diseases of Animals Act he inspects the animals slaughtered at the Corporation Abattoir, to determine the presence or absence of disease. He also inspects the dairy-yards, and has succeeded in making great improvements in many of them. Now, the point I desire to emphasise is this—Dublin is the only Irish town having the whole services of a veterinarian: is it not desirable that in the case of the larger towns the full services of a veterinary surgeon should be secured, and in the case of the smaller ones a portion of his time? Veterinary inspection would lead to the detection of tubercular and other diseases in the cow. No doubt the Medical Officer of Health is expected to inspect dairies and cow-sheds, and in the case of the towns does so; but he would be glad of the co-operation of the veterinarian, especially when, say, it became desirable to apply the tuberculin test to cows.

Although Dublin has an unusually large number of dairy-yards within the municipal boundaries and in its townships, a very large proportion of its milk supply comes from rural districts, especially from the South of Ireland. The citizens of Dublin are therefore interested in the conditions under which the extra-urban supply of milk is produced. The City Sanitary Authority has no power to inspect the sources of its rural milk supply, but Parliament could give such power, if applied for, as has been done successfully by some English towns. I have examined a great many specimens of milk from the country taken at the railway stations by inspectors of food. On the whole, I found them far less clean than the city milk. In many of them particles of manure, cow hairs and other impurities were largely present. On being allowed to stand in glasses for some hours much dirty matter would sink to the bottom of the vessels. Before being retailed much of the country milk is strained, but in the case of the smaller milk shops the straining is not always, or perhaps never, performed.

Why country milk is not cleaner than town milk is due to the practically total absence of supervision of the cows, cow-sheds and milk stores in the country. No doubt the medical officers of health have power to inspect dairies if they have reason to believe that any nuisances exist in them. The local authorities, however, have no code of by-laws affecting dairies and cow-sheds, and as a rule make no arrangement for their systematic inspection. In Ireland every dispensary medical officer is *ex-officio* medical officer of health for his dispensary district, but he receives as such so trifling a salary that he can hardly be expected to be an enthusiast for sanitary reforms.

There is no doubt whatever as to the want of proper sanitary supervision of the dairy farms in Ireland, and perhaps I might say the same of those on the other side of the channel. The local medical officers of health are not likely to be more active than they are at present. In many cases the dairy farmers are members of the board of guardians by whom the medical officers are appointed. Why should there not be whole-time medical officers of health for each county as is the case in England, Scotland and Wales? If these County Medical Officers of Health had fixity of tenure, and were provided with a staff of sanitary inspectors, the hygiene of the dairy and hygiene generally would be adequately attended to. The next general Sanitary Act for Ireland should certainly create County Medical Officers of Health.

There is another plan which, if adopted, would ensure effective supervision of dairy farms. It is the placing of the inspection of dairies and cow-sheds entirely under the direction of the Board of Agriculture.

The Diseases of Animals Act and the Dairies, Cow-Shed and Milk-Shops Orders are administered conjointly by the Board of Agriculture and the local Sanitary Authorities.

The hygienic work which devolves mainly on the Sanitary Authorities should be performed by the staff of the Board of Agriculture. This staff, of which an able sanitarian, Mr. Mathew Hedley, is the professional head, was formerly a department under the Privy Council, but was transferred to the Board of Agriculture and Technical Education, on the establishment of that body. The veterinary department has rendered great services to the country. One formidable disease of the ox—contagious pleuro-pneumonia, which for more than half a century had decimated the dairy-yards—was extirpated by the measures carried out by the department.

At present the Board of Agriculture has the services of about 50 qualified veterinary surgeons and about the same number of inspectors. Their duties refer to the inspections of animals, the prevention of the export or import of diseased animals, the prevention of the spread of epizöotic diseases, &c. Why not give the department the administration of all the Acts and Orders relating to the diseases and hygiene of dairy cows? Their veterinary staff would, no doubt, have to be increased and the services of bacteriologists obtained, but the expense thereby caused would be amply compensated by the public having a purer supply of so important an article of diet as cows' milk.

As regards the pasteurising and sterilising of milk, I may say that, as prevention is better than cure, it is better to keep dangerous organisms out of milk than to try to kill them. It is not to be taken that I consider the pasteurising and sterilising of milk to be undesirable, but even when milk is to be subjected to either process the cleaner it is the better. A writer in the *British Medical Journal* expressed the opinion that the money spent by municipalities in maintaining "humanised" milk-depôts would be better expended in enforcing cleanliness in the dairy-yards and milk-shops. Many will be disposed to share the writer's opinion.

(*To be continued.*)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Sir Thornley Stoker, M.D., F.R.C.S.I.
General Secretary—James Craig, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—Sir Arthur Chance, P.R.C.S.I.
Sectional Secretary—E. H. Taylor, F.R.C.S.I.

Friday, May 11, 1906.

The President in the Chair.

Enucleation of the Prostate.

Sir William Thomson read a paper on a further series of the above operation. He described the more important of eighteen cases, and discussed various points of interest which had been noticed. One of the specimens shown weighed six and a quarter ounces, and one ten ounces, less a few grains. He described the after treatment of the cases, the management of various complications, and discussed continuous severe hæmorrhage from the prostate. For this he had carried out enucleation with success. He believed this was the first time that the operation had been reported as undertaken for hæmorrhage only, and he maintained that it was the proper treatment where all other means failed.

Sir Thornley Stoker expressed himself in doubt as to the accuracy of statistics concerning the mortality resulting from operation for prostatic enlargement. The time required for prostatic enucleation, in his experience, varied. He had enucleated a large prostatic growth in two minutes, but in another case in which the growth was small the enucleation took half an hour. He recommended benzoate of sodium as a useful drug for promoting acidity of the urine. He considered the Trendelenburg position attended by danger in the case of aged patients.

Sir Arthur Chance favoured operative measures directed towards the relief of patients suffering from the effects of senile prostatic enlargement. He had found large prostates easy to deal with, and he had frequently noticed that small prostates gave the most trouble. In fatal cases the cause of death was usually intra-thoracic complications. He regarded the Trendelenburg position of great assistance, and he had not found it attended by any obvious risk.

Sir William Thomson, in replying, stated that there was no direct relationship between the degree of prostatic enlargement and the intensity of the symptoms. He alluded to cases of death following suddenly after operation, and which were due evidently to embolism. With regard to washing out the bladder, he usually did so through the urethra forty-eight hours after the enucleation.

A Note on Bladder Tumours.

Mr. L. G. Gunn read a paper on the above subject, and illustrated his remarks with the aid of a series of lantern slides.

SECTION OF MEDICINE.

President—Sir W. Smyly, P.R.C.P.I.
Sectional Secretary—F. C. Purser, M.D.

Friday, May 18, 1906.

James Craig, M.D., in the Chair.

Sudden Hemiplegia in a child due to Tubercular Cerebral Tumour.

Dr. Travers Smith read notes of the case of a male child, aged two and a half years, who, upon Jan. 1, 1906, whilst in apparently perfect health, suddenly lost voluntary power in the right arm and leg. A fortnight later great rigidity appeared in the affected arm and leg. The right leg and, to a less extent, the left one were drawn up in the intrauterine position. On March 1 the child showed signs of tubercular meningitis, and died upon March 6. *Post-mortem*, tubercular meningitis was found, and a large tubercular tumour, the size of a hen's egg, was found to occupy the region of the corpus striatum and internal capsule. No hæmorrhage was visible in or around the tumour. Dr. Travers Smith considered the case interesting from the following points of view:—(*a*) The large size of the tumour; (*b*) its position; (*c*) the power of a tumour to produce sudden hemiplegia in a child apparently healthy.

Artificial Respiration.

Mr. Robert Woods read a paper on this subject, in which he compared the relative advantages of Sylvester's method with the older one of direct insufflation. He showed that by direct insufflation more air was introduced, and, therefore the stimulating effect on the vascular and respiratory mechanisms as well as the rapidity of elimination of a drug such as chloroform was greater, while the impurity of the air insufflated (the original reason for abandoning the method) was negligible.

Professor Thompson said he agreed that Mr. Woods' ideas on artificial respiration were an improvement on the methods at present used, his only objection being the repugnance of placing mouth to mouth.

The Nauheim Treatment.

Dr. A. Ainslie Hudson read a paper on this subject. He described the composition of the effervescing baths, and detailed his methods of artificially preparing these in Ireland. He then gave an explanation of the physiology of the improvements which follow the baths, and the exercises which accompanied them. The immediate effect of the application of the water, rich in salines, is to produce a powerful stimulation of the muscular coats of the superficial blood-vessels, an effect greatly enhanced by the presence of the CO_2. Dr. Hudson also detailed the technique of the treatment, and described the nature of the exercises the patients performed, and indicated the nature of the ailments and the symptoms which could be cured or alleviated by the treatment.

The Chairman and Dr. Finny discussed the treatment, which they agreed was often beneficial.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the Editor.

Vital Statistics

For four weeks ending Saturday, June 16, 1906.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending June 16, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.6 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, June 16, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	May 26	June 2	June 9	Jnne 16			May 26	June 2	June 9	June 16	
22 Town Districts	21.0	20.8	18.0	17.6	19.2	Lisburn -	9.1	18.2	9.1	9.1	11.4
Armagh -	20.6	20.6	27.5	27.5	24.0	Londonderry	21.1	13.6	27.3	24.8	21.7
Ballymena	33.5	28.7	4.8	14.4	20.3	Lurgan -	4.4	22.1	13.3	22.1	15.5
Belfast -	22.0	21.8	19.8	19.5	20.8	Newry -	12.6	29.4	4.2	12.6	14.7
Clonmel -	15.4	20.5	5.1	5.1	11.5	Newtownards	11.4	22.9	22.9	22.9	20.0
Cork -	24.0	16.4	18.5	16.4	18.8	Portadown -	36.2	15.5	15.5	10.3	19.4
Drogheda -	28.6	8.2	12.3	20.4	17.4	Queenstown	6.6	19.8	6.6	26.4	14.9
Dublin (Reg. Area) -	22.4	20.2	18.4	16.4	19.3	Sligo -	9.6	19.2	9.6	-	9.6
Dundalk -	19.9	12.0	8.0	16.0	14.0	Tralee -	10.6	5.3	10.6	10.6	9.3
Galway -	11.7	23.3	46.6	7.8	22.3	Waterford -	23.4	13.6	13.6	21.4	18.0
Kilkenny -	14.7	29.5	-	14.7	14.7	Wexford -	23.3	37.4	18.7	9.3	22.2
Limerick -	9.6	23.2	9.6	20.5	15.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, June 16, 1906, were equal to an annual rate of 1.3 per 1,000, the rates varying from 0.0 in seventeen of the districts to 6.9 in Armagh—the 4 deaths from all causes in that district including one from measles. Among the 134 deaths from all causes in Belfast are one from measles, 7 from whooping-cough, and 7 from diarrhœal diseases; and the 20 deaths from all causes in Londonderry include 3 from measles and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, June 16, 1906, amounted to 250—133 boys and 117 girls; and the deaths to 126—60 males and 66 females.

DEATHS.

The deaths registered during the week ended Saturday, June 16, represent an annual rate of mortality of 17.3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 16.4 per 1,000. During the twenty-four weeks ended with Saturday, June 16, the death-rate averaged 23.5, and was 3.9 below the mean rate for the corresponding portion of the ten years 1896–1905.

The registered deaths (126) included 2 from whooping-cough, one from enteric fever, and 4 from diarrhœal diseases. In each of the 3 weeks preceding, deaths from whooping-cough were 3, 3, and one; deaths from enteric fever were 0, 0, and 0; and deaths from diarrhœal diseases were 3, 2, and one. At the Normal Climatological Station in Trinity College the weekly mean of the earth temperatures at 4 feet was 53.9°. There was one death from influenza.

Two deaths from broncho-pneumonia and 4 deaths from *pneumonia* (not defined) were registered.

There were 29 deaths from all forms of tuberculous disease, namely—9 deaths from tubercular phthisis, 8 deaths from *phthisis*, 2 deaths from tubercular meningitis, and 10 deaths from other forms of the disease. In each of the 3 preceding weeks the totals of deaths from all forms of tuberculous disease were 29, 28, and 30.

There were 2 deaths from carcinoma and 6 deaths from cancer (undefined).

Five deaths were attributed to diseases of the brain and nervous system—of this number one was that of an infant under one year of age from *convulsions*.

Twenty-six deaths were caused by diseases of the heart and blood vessels.

Bronchitis caused 10 deaths.

Of 3 deaths due to violence one was homicidal, and 2 were due to accidental causes.

In 3 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the death of a person aged 69 years.

Twelve of the persons whose deaths were registered during the week ended June 16 were under 5 years of age (5 being infants under one year, of whom one was under one month old) and 43 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 5 were octogenarians, and one (a man) was stated to have been aged 94 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended June 16, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	May 26	-	*	*	4	-	-	5	-	4	2	14	-	*	*	*	29
	June 2	-	*	*	4	-	-	11	-	2	9	7	-	*	*	*	33
	June 9	-	*	*	3	-	-	3	-	1	5	10	-	*	*	*	22
	June 16	-	*	*	4	-	-	13	-	3	3	2	-	*	*	*	25
Rathmines and Rathgar Urban District	May 26	-	*	*	-	-	-	-	-	-	-	-		*	*	*	-
	June 2	-	*	*	2	-	-	1	-	-	-	1	-	*	*	*	4
	June 9	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 16	-	*	*	3	-	-	-	-	-	-	-	-	*	*	*	3
Pembroke Urban District	May 26	-	-	-	-	-	-	-	-	-	-	1	-	*	-	-	1
	June 2	-	-	-	1	-	-	-	-	-	-	1	-	*	-	-	2
	June 9	-	-	-	3	-	-	-	-	1	1	-	-	*	1	-	6
	June 16	-	-	-	2	-	-	-	-	-	-	-	-	*	2	-	4
Blackrock Urban District	May 26	-	*	*	-	-	-	1	-	-	-	-	-	*	*	*	1
	June 2	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 9	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 16	-	*	*	-	1	-	-	-	-	-	-	-	*	*	*	1
Kingstown Urban District	May 26	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 2	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 9	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 16	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
City of Belfast	May 26	-	*	*	14	-	-	1	-	4	7	5	-	*	*	*	31
	June 2	-	*	*	17	-	-	2	-	6	8	2	1	*	*	*	36
	June 9	-	*	*	15	-	-	5	8	6	7	7	-	*	*	*	48
	June 16	-	*	*	12	-	-	2	-	5	8	3	-	*	*	*	30

INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended June 16, 1906, 3 cases of measles were admitted to hospital, 4 were discharged, and 16 cases remained under treatment at the close of the week.

Six cases of scarlet fever were admitted to hospital, 5 were discharged, and 43 cases remained under treatment at the close of the week. This number is exclusive of 14 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus was admitted to hospital, and remained under treatment at the close of the week.

Twelve cases of diphtheria were admitted to hospital, 6 convalescents were discharged, and 30 patients remained under treatment at the close of the week.

Two cases of enteric fever were admitted to hospital, 3 convalescents were discharged, and 26 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 11 cases of pneumonia were admitted to hospital, 13 were discharged, and 28 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended June 16, 1906, in 76 large English towns, including London (in which the rate was 12.2), was equal to an average annual death-rate of 12.9 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.8 per 1,000, the rate for Glasgow being 16.9, and for Edinburgh 14.6.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended June 16. From this Return it appears that of a total of 28 cases notified 13 were scarlet fever, 10 diphtheria, 3 erysipelas, and one typhoid fever. Among the 327 cases of infectious diseases in hospital at the close of the week were 124 cases of scarlet fever, 37 of diphtheria, 93 of measles, 9 of erysipelas, 18 of whooping-cough, and 11 of typhoid fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of June,* 1906.

Mean Height of Barometer,	30.129 inches.
Maximal Height of Barometer (4th, at 9 a.m.),	30.380 ,,
Minimal Height of Barometer (1st, at 9 a.m.),	29.442 ,,
Mean Dry-bulb Temperature,	58.4°.
Mean Wet-bulb Temperature,	54.6°.
Mean Dew-point Temperature,	51.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.381 inch.
Mean Humidity,	77.7 per cent.
Highest Temperature in Shade (on 21st),	76.2°.
Lowest Temperature in Shade (on 30th),	42.7°.
Lowest Temperature on Grass (Radiation) (30th),	37.8°.
Mean Amount of Cloud,	55.2 per cent.
Rainfall (on 12 days),	1.049 inches.
Greatest Daily Rainfall (on 21st),	.169 inch.
General Directions of Wind,	N.E., N.W.

Remarks.

A fine month, with a high mean atmospheric pressure (30.129 inches), a marked prevalence of northerly or "polar" winds, and drought from the 2nd to the 15th. The second half of the month was showery, but otherwise favourable. It is noteworthy that the mean temperature was 1.6° above the average, notwithstanding the overwhelming preponderance of winds from polar quarters. By a strange coincidence the mean temperature was precisely the same as that of June, 1905, which was a beautiful and in all respects a favourable month. The mean amount of cloud was 62.3 per cent. at 9 a.m. and only 48.0 per cent. at 9 p.m., the general mean being 55.2 per cent. The estimated duration of bright sunshine was 220 hours, or a daily average of 7.3 hours. In 1905, the corresponding values were 237.5 hours and 7.9 hours.

In Dublin the arithmetical mean temperature (59.6°) was above the average (58.0°) by 1.6°; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58.4°. In the forty-two years ending with 1906, June was coldest in 1882 (M. T. = 55.8°) and 1879 ("the cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°); in 1896 (M. T. = 61.4°); and in 1899 (M. T. = 61.3°). In 1905 the M. T. was 59.6°

The mean height of the barometer was 30.129 inches, or 0.212 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.380 inches at 9 a.m. of the 4th, having fallen to 29.442 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 0.938 inch.

The mean temperature deducted from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58.4°, or 7.5° above the corresponding M. T. for May, 1906. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .465), the value was 59.1°, or 1.6° above the average mean temperature for June, calculated in the same way, in the thirty years, 1871–1900, inclusive (57.5°). The arithmetical mean of the maximal and minimal readings was 59.6°, compared with a thirty years' average of 58.0°. On the 21st the thermometer in the screen rose to 76.2°—wind, S.W.; on the 30th the temperature fell to 42.7°—wind, W.N.W. The minimum on the grass was 37.8° on the 30th.

The rainfall amounted to 1.049 inches on 12 days. The average rainfall for June in the thirty-five years, 1866–1900, inclusive, was 1.920 inches, and the average number of rainy days was 15. The rainfall, therefore, and also the rainy days were considerably below average. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879, also, 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 inch was measured on 6 days. In 1887 the rainfall was only .252 inch, distributed over 5 days. In 1905, 1.175 inches fell on 11 days.

High winds were noted on only 4 days, and reached the force of a gale on the 25th. Solar halos were seen on the 9th, 14th, 21st, 25th and 28th. Temperature reached or exceeded 70° in the screen on 10 days, compared with 7 days in 1905, 4 days in 1904, 2 days in 1903, only 1 day in 1901, and 8 days in 1902. Lightning was seen in the night of the 9th.

The rainfall in Dublin during the six months ending June 30th amounted to 12.641 inches on 109 days, compared with 10.201 inches on 92 days in 1905, 12.817 inches on 102 days in 1904, 15.054 inches on 108 days in 1903, 12.344 inches on 98 days in 1902, 9.352 inches on 80 days in 1901, 13.090 inches on 114 days in 1900, 11.295 inches on 95 days in 1899, 12.115 inches on 98 days in 1898, 13.950 inches on 113 days in 1897, 7.854 inches on 84 days in 1896, only 6.741 inches on 67 days in 1887, and a thirty-five years' average of 12.060 inches on 95 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Thomas H. Hill, Sch., returns the mean height of the barometer as 30.133 inches, the highest reading observed being 30.380 inches at 9 a.m. of the 4th, the lowest, 29.443 inches at 9 a.m. of the 1st. The arithmetical mean temperature was 58.2°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being also 58.2°. The thermometer rose to 76.8° in the shade on the 21st, and fell to 42.0° on the 30th, when the grass minimum was 38.8°. Rain fell on 12 days to the amount of 1.004 inches, .139 inch being measured on the 15th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 210.3, giving a daily average of 7.0 hours. The corresponding figures for June, 1905, were 217.6 hours and 7.3 hours. The mean earth temperature read at 9 a.m. was 58.1° at a depth of 1 foot below the surface of the ground, 53.9° at a depth of 4 feet.

Dr. B. H. Steede recorded a rainfall of .861 inch on 12 days at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow. On the 23rd the measurement was .310 inch. The total rainfall in 1906 up to June 30 was 14.397 inches on 100 days. As regards temperature, the thermometer in the shade rose to 75.6° on the 21st, and fell to 41.0° on the 30th.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was .870 inch on 7 days, compared with 3.341 inches on 16 days in 1902, 1.785 inches on 11 days in 1903, 2.280 inches on 10 days in 1904, and 1.500 inches on 10 days in 1905. The heaviest rainfall in 24 hours was .380 inch on the 23rd. The total fall since January 1 has been 12.535 inches on 73 days, compared with 11.111 inches on 77 days in 1905, 14.307 inches on 94 days in 1904, 17.440 inches on 90 days in 1903, 15.091 inches on 84 days in 1902, 13.670 inches on 75 days in 1901, 18.191 inches on 105 days in 1900, 19.510 inches on 95 days in 1899, 13.500 inches on 88 days in 1898, 18.125 inches on 106 days in 1897, and 7.356 inches on 61 days in 1896.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, as 1.26 inches on 15 days, compared with 1.51 inches on 12 days in 1905, 1.22 inches on 14 days in 1904, 1.54 inches on 12 days in 1903, 3.08 inches on 19 days in 1902, and 1.71 inches on 13 days in 1901. The greatest daily fall was .21 inch on the 28th. The mean shade temperature was 60.4°. The thermometric range was from 77° on the 21st to 46° on the 29th and 30th.

The rainfall recorded at Cloneevin, Killiney, Co. Dublin, by Mr. R. O'B. Furlong, C.B., was .87 inch on 11 days, compared with 1.56 inches on 11 days in 1905. The maximal fall in 24 hours was .28 inch on the 23rd. The average rainfall in June in the 21 years (1885–1905) was 1.79 inches on 13.0 days. The total fall at Cloneevin since January 1, 1906, amounts to 11.95 inches on 104 days, compared with 12.56 inches on 89 days in the first six months of 1905.

Mr. T. Bateman reports that the rainfall at The Green, Malahide; was 1.77 inches on 12 days, compared with 1.41 inches on 10 days in 1905. The heaviest fall in 24 hours was .45 inch on the 21st. The mean shade temperature was 57.4°, the extremes being—highest, 75°; lowest, 39°.

Dr. C. Joynt returns the rainfall at 21 Leeson Park, Dublin, as 1.410 inches on 12 days, .350 inch having been recorded on the 21st.

At White Cross, Stillorgan, Co. Dublin, Miss Muriel O'Sullivan registered a rainfall of 1.002 inches on 11 days—the largest measurement in 24 hours being .175 inch on the 15th.

The Rev. Arthur Wilson, M.A., reports a rainfall of 3.165 inches on 14 days at the Rectory, Dunmanway, Co. Cork. The first 15 days were very dry and warm, with a scanty rainfall—only .135 inch on 2 days. On the 17th .59 inch was measured; on the 30th .47 inch, and on the 26th .43 inch. The rainfall for the first six months of 1906 at Dunmanway was 27.225 inches.

Mr. W. Miller returns the rainfall at Cork as 1.62 inches on 11 days—this amount falling short of the average for June by 1.17 inches. The greatest rainfall in 24 hours was .27 inch on the 26th. The rainfall of the first six months of 1906 in Cork was 15.22 inches, or 2.53 inches below the average.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell in June on 14 days to the total amount of 1.545 inches, .300 inch being registered on the 21st. The duration of bright sunshine was 203.7 hours, the most in one day being 13.7 hours on the 12th. On the 8th, the record was 13.6 hours.

Dr. J. Byrne Power, F.R., Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 57.6°, being 0.6° above the average for June during 19 previous years (1873–83 and 1898–1905), the extremes being—highest, 75.5° on the 21st; lowest, 44.5° on the 5th, 29th, and 30th. At Bournemouth the mean was 57.8°; the extremes being—highest, 76° on the 23rd; lowest, 43° on the 6th. The mean daily range was 11.5°, at Bournemouth it was 16.5°. The mean temperature of the sea at Sandycove bathing-place was 53.4°, being 1.6° below the average for the month during the previous 8 years. The average relative humidity was 76 per cent., being 1 per cent. above the average for the month during the previous 5 years. The rainfall was 0.90 inch on 14 days, being 1.05 inches below the average for the month during 16 previous years (1873–83 and 1901–05). At Bournemouth the rainfall was 0.83 inch on 6 days. The duration of bright sunshine was 226 hours, being 42.3 hours above the average for the month during the previous 5 years. The corresponding figures were 203.7 hours at the Ordnance Office, Phœnix Park, 216.7 hours at Southport, and 270.5 at Bournemouth.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Argyrol.

Argyrol is an organic silver compound, strongly antiseptic, non-irritating, and non-toxic in the strengths usually employed. Five to fifty per cent. solutions are used in purulent and gonorrhœal ophthalmia and in lacrymal obstruction. In gonococcal urethritis, initial injections of a five per cent. solution, gradually increased in strength, are recommended. Rectal injections of one to five pints of a one per cent. solution are employed in mucous and ulcerative colitis. Argyrol is stated not to precipitate albumen, and hence the solution penetrates the tissues without causing a superficial coagulum such as occurs with other agents. This property is of importance in gonorrhœa, the solution of argyrol being capable of destroying gonococci in the deeper tissues. The action of argyrol is best secured by the use of "Tabloid" and "Soloid" brand products, of which the following are issued by Messrs. Burroughs, Wellcome & Co., London :—"Tabloid" Ophthalmic Argyrol, gr. 1/24 (0.0027 gm.) in tubes of 25; one placed directly on the conjunctiva dissolves in a few seconds. "Soloid" Argyrol, gr. 1 (0.065 gm.) in tubes of 12; one dissolved in sufficient distilled water to produce a volume of eleven minims yields a ten per cent. solution. "Soloid" Argyrol, gr. 4.45 (0.353 gm.) in tubes of 6; one dissolved in one drachm of water yields a ten per cent. solution.

FORMULA FOR ECZEMA OF THE HANDS.

Dr. J. V. Shoemaker, in the *Medical Bulletin*, April, 1906, gives the following prescription for eczema of the hands :—℞. Acidi salicylici, gr. 10; hydrargyri ammoniati, gr. 20; olei eucalypti, ʒss; ung. aquæ rosæ et ung. zinci oxidi, āā ʒiv. M. Ft. ung. Sig: Apply twice daily to the parts of the hands affected.—*New York Medical Journal*, May 5, 1906.

X-RAY BURNS.

At the 337th Regular Meeting of the New York Dermatological Society, held November 28, 1905, the subject of X-ray burns was taken up, and Dr. Henry G. Piffard, Emeritus Professor of Dermatology in New York University, said, according to the *Journal of Cutaneous Diseases*, "that he had obtained the most benefit in treating these conditions from antiphlogistine, chloride of zinc, high frequency current and ultra violet rays."

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PART I.
ORIGINAL COMMUNICATIONS.

ART. VII.—*Clinical Report of the Rotunda Hospital.*[a] By E. HASTINGS TWEEDY, F.R.C.P.I. (Master); and ARTHUR HOLMES, M.B., B.Ch., B.A.O. (Assistant Master).

(*Continued from page 100.*)

MATERNAL MORTALITY.

THE first of our six deaths occurred on the 14th of November, 1904, from a condition which we tentatively term eclampsia, though it differed in many clinical and pathological points from that disease as we commonly meet it.

CASE I.—M. C., 6-para, aged thirty-four, was admitted on the morning of the 11th in labour; she was deeply jaundiced and œdematous, with marked albuminuria; her aspect was dull and lethargic. The case was diagnosticated as uræmia; milk and water in large quantities to drink and saline purgatives were prescribed. At 8 30 p.m. of the same day she delivered herself naturally of a stillborn, but fully developed, child; she slept well that night, but on the following morning complained of headache and dimness of vision. The œdema and jaundice increased. The bowels were moved by means of a large enema, and a saline enema was injected and retained as desired. A slight fit took place at 2 p.m., and was followed by a severe one at 5 p.m., with a third of less severity in ten minutes time. At the end of the first fit half a grain of morphin was injected, and another quarter at the termination of the third and last fit. The patient never recovered consciousness, and died in profound coma on the night of the 14th, just forty-five hours after the last convulsion. Her temperature rose to 103°, with pulse of 120, immediately after the first fit, and remained at these points to the end. Her urine was high coloured, considerably diminished in quantity, and loaded with albumen.

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[a] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, May 25, 1906.

Professor O'Sullivan has kindly supplied us with the following report of the pathological findings of the liver, and they present, in his opinion, a unique condition:—

"The liver presented an appearance which, for the extent of tissue involved, is quite without a parallel in the literature of the subject as far as I have been able to find.

"The organ was somewhat larger than normal; the capsule smooth and transparent. On the surface there showed through the capsule large irregular clay-coloured areas, each surrounded by a wavy red zone a few millimetres in thickness. The remainder of the surface was stained of a deep green colour, the outlines of the lobules showing distinctly, the darker green being in the centre.

"On section the same appearances were to be seen—clay-coloured homogeneous areas, each surrounded by its red zone, coalescing and forming larger areas, while the remaining liver tissue showed the deep green bile staining. Fully two-thirds of the liver tissue had undergone transformation into this clay-coloured substance.

"The gall-bladder was much thickened and retracted; the mucous membrane hypertrophic and thrown into folds. At the extreme upper end a cholesterin stone was impacted, blocking up the orifice of the cystic duct. The stone was of the size of a small hazel nut.

"Microscopic sections showed, in the clay-coloured areas, the liver tissue in a typical condition of coagulation necrosis, the nuclei refusing to stain, while the cell protoplasm took on a diffuse dirty staining. In the red peripheral zones the capillaries were filled with red cells. The tissue of Glisson's capsule was less affected, most of the connective tissue nuclei staining well.

"Sections stained with Weigert's fibrin stain, and counterstained with carmine, presented a very striking appearance. All through the necrotic portions, and at their margins, just outside the red zones, the walls of middle sized and smaller branches of the hepatic artery were converted into a substance which retained the fibrin stain strongly. On following up the arteries the degeneration ceased as they got larger, at first becoming confined to the cells of the muscular coat, then appearing only in a few of the muscle cells, the rest being healthy, and finally disappearing altogether. Everywhere there could be seen, close to the smaller branches of the artery, but at a little distance from it, a bunch of capillaries whose walls had undergone the same degeneration, and retained the fibrin stain. The liver cells between these capillaries were sometimes healthy, sometimes necrotic. Neither the branches of the portal or hepatic veins, nor the capillaries elsewhere through the liver, showed any tendency to this degeneration, even in the most completely necrosed portions they did not retain the fibrin stain. There was nowhere any destruction of liver tissue such as occurs in acute yellow atrophy. The necrotic cells everywhere retained their form and arrangement.

"Osmic acid sections showed a few granules and globules of fat scattered through the section, but no evidence of any extensive fatty change.

"Sections from a number of different parts of the organ were stained by various methods for bacteria, but none were found.

"We have then, as far as the pathological anatomy of the liver goes, a case of extensive anæmic infarction, accompanied (and possibly caused) by an equally extensive hyaline or fibrinoid degeneration of the smaller branches of the hepatic artery, a certain system of capillaries, probably those in relation to the artery, being similarly degenerated.

"The jaundiced condition of the liver and the general jaundice must be regarded, I think, as due to the enormous blocking of the biliary circulation in the infarcted portions, rather than to the biliary calculus, as the calculus apparently left the hepatic ducts and common bile duct free."

Case II.—M. K., 6-para, aged thirty-six, admitted May 25th, 1905, from the extern maternity, suffering from a ruptured uterus, and undelivered. Labour had started at 8 a.m. on the 24th, membranes ruptured an hour later, and pains continued strong till 10 30 a.m., when they ceased altogether.

Her friends becoming uneasy about her condition sent to the hospital for help, and she was admitted that night at 11 30, a correct diagnosis of her condition having previously been made by the clinical clerk. Forceps were at once applied to the head fixed in the brim, in the occipito-posterior position, with os almost fully dilated, the body of the fœtus at the same time lying free in the abdominal cavity. Delivery was easily accomplished, and a rent was discovered involving the cervix and posterior wall of the vagina. The placenta, which lay free in the abdomen, was removed by hand. The patient's condition did not seem to warrant operation, and the rent was plugged with iodoform gauze. Death followed in four hours.

This case furnishes another example of the rupture which some years ago I pointed out as being the kind most commonly met with in this country. Our experience in this differs from that of other countries, where contracted pelves furnish the most common source of rupture.

The origin of these utero-vaginal tears I believe to be closely associated with cervical cicatrices, the result of former deliveries, with a consequent incapacity for full dilatation of the cervix.

It is not uncommon to find the cervix of the primipara incapable of a sufficient dilatation to permit the passage of the fœtus through it, and rupture of the uterus must consequently take place before the birth of the child. In such cases as these it is a fortunate matter that the cervix is the weakest portion of the uterus, and, therefore, the part which gives way. On the other hand, in multiparæ it may be found tough and exceedingly unyielding on account of deposit of fibrous tissue—such a condition predisposing to the accident described.

In the discussion provoked by the reading of my paper on this subject, the statement was made that a primipara's cervix would never tear provided labour was natural and the membranes were not prematurely ruptured. I have met many cases that prove the incorrectness of this view, and I select the following from amongst them:—

L. M., attended by me, in labour for the first time after five years sterility. She was delivered of premature twins, of such diminutive size that the ring worn on my little finger passed easily over their hands. The delivery was easy, and the membranes only ruptured a short time before birth. She suffered greatly from menstrual pain for years before this pregnancy, and I have recently operated on her for the repair of a bi-lateral laceration of the cervix.

Case III.—M. K., 9-para, aged thirty-five, admitted May 25th, 7 45 p.m., with a history of five fits. A sixth took place immediately she reached the hospital, and two more followed this at intervals of half an hour; a hypodermic of morphin—half grain—was administered as soon as possible, and the stomach was washed out in the usual manner. Purgatives were poured through the stomach tube, and these, aided by copious saline enemata, had the desired effect. The patient was deeply comatose, and labour did not start until four hours after admission. Four hours later she delivered herself of a full term, stillborn child.

I saw her before I retired to bed, and then considered her condition in every way favourable. She showed distinct signs of regaining consciousness, urine was being secreted, and her pulse was strong. It was therefore with feelings akin to dismay that I learned on going my rounds in the morning that the patient had died suddenly at 8 25 a.m., and that my Assistant had only just time to be called and observe her condition before the fatal termination.

No further eclamptic seizures had taken place, and all who saw her concur in stating that she became deeply cyanosed with swollen tongue, and died in apparently a choking condition.

I much regret that there was not time to call me to see this patient, for it is just possible that oxygen inhalations, combined with vigorous efforts at artificial respiration, might have warded off the fatal attack. It will be noted that death took place five and a quarter hours after delivery, no fit having occurred for eleven and a quarter hours. The great cyanosis reminds one forcibly of the fatal case reported by Professor Bumm, which he terms " eclampsia without fits."

Case IV.—S. O'K., primipara, admitted 30th June, 1905, in premature labour at seven months. Her labia and thighs were covered with horribly foul-smelling and septic venereal sores. She delivered herself naturally and without any interference in a special isolation ward, to which she was conveyed immediately on admission. A temperature of 104°, with pulse of 150, developed, and a very acute form of sepsis supervened, with repeated rigors, but persistent temperature. On the seventh day it was apparent that death was inevitable, and I decided to give her the faint chance of ligaturing the pelvic veins. On opening the abdomen, however, the uterus and tubes were found bathed in pus on their peritoneal aspect, and nothing remained but to remove these organs; this was rapidly accomplished, but the patient ceased to breathe just as the operation was finished.

Case V.—Pneumonia. A. D., 9-para, aged twenty-eight, admitted September 18th, 1905. She had been delivered of a dead child in a cab on her way to hospital. Her condition was wretched, and there was a history of great alcoholic excess. The right lung was completely solid, and she died on the ninth day after admission.

Case VI.—M. C., primipara, aged thirty-eight, admitted October 19th, 1905, with membranes ruptured, os about half dilated, and a fœtal leg protruding through the vulva. She stated that this condition had existed for three hours, an arm had also passed through the cervix, but there were no labour pains.

I issued distinct orders that the case should be left to nature so long as pulse and temperature showed no signs of rising. A mistake in transmitting this order occurred, and my Assistant Master formed the impression that it was my desire that he should deliver immediately. In this he experienced great difficulty. The operation took two hours to complete, in chief part owing to the tight closure of the cervix round the neck of the child. A macerated fœtus was eventually extracted, and a complete rupture of the perinæum stitched. Temperature and pulse rose on the second day, and though the former fell after a few days to normal, the latter became continuously quicker, and she died on the sixth day after delivery of very acute sepsis.

The autopsy showed acute peritonitis, with pus, in the abdominal cavity. The uterus was studded with sloughing myomata, and both tubes were converted into pus sacs. I may add that all operative manipulations were conducted with gloved hands, and for this reason I think that possibly the septic condition may have been contracted before admission to hospital.

INFANTILE CONDITIONS.

Congenital umbilical hernia was present in an infant whose parents were deaf and dumb. The intestines protruded as a large mass, and were separated from the air only by a thin coating of the greatly stretched out umbilical cord.

An abdominal section was performed three hours after the birth, and the intestines were found so firmly adherent to the sac that a somewhat severe tear of the bowel occurred during their separation. This was stitched in the usual manner, and the intestines were returned to the abdomen, not without considerable difficulty. The child left the hospital in perfect health one month after the operation.

TABLE NO. I.—*Maternity Department.*

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total deliveries -	144	132	153	146	169	159	181	147	161	154	172	147	1,865
Total abortions -	2	1	4	1	—	7	5	2	5	2	4	6	39
Not in labour -	19	26	19	31	29	28	39	35	33	24	27	27	337
Total	165	159	176	178	198	194	225	184	199	180	203	180	2,241

TABLE NO. II.—*Out-Patients.*

Number of first attendances - - -	4,580
,, repeated ,, - - -	6,480
Special Dispensaries - - - - -	1,965
Total - - -	13,025

TABLE NO. III.—*Showing Nature and Number of Cases in Extern Maternity.*

Total deliveries - -	2,178	Hæmorrhage—con.—	
Abortions - - -	272	Unavoidable - -	11
Presentations—		*Post-partum* - -	20
Face - -	6	,, ,, secondary	1
Face to Pubes -	21	Operations—	
Brow - -	1	Forceps - -	32
Breech and Footling -	69	Versions - -	16
Transverse and Oblique	9	Manual removal of Placenta - -	34
Compound - -	5	Catheterisation for Hydrocephaly - -	1
Corpore conduplicato -	1	Maternal mortality -	8
Twins - -	25	Infantile conditions—	
Prolapse of Funis - -	6	Congenital intestinal obstruction -	1
Hydramnios - -	3	Spina bifida - -	1
Mania - -	1	Hydrocephalus -	3
Phlegmasia - -	2	Anencephalus - -	1
Complete laceration of Perinæum - -	3	Meningocele - -	1
Hæmorrhage—		Talipes - -	3
Accidental - -	2		

Table No. IV.—*Showing Nature and Number of Cases Treated in Intern Maternity.*

Total admissions	2,241	Pneumonia	2
„ deliveries	1,904	Eclampsia	12
Abortions	39	Mania	2
Primiparæ	700	Puerperal ulcer	8
Hyperemesis	2	Mastitis	2
Hydramnios	8	Spontaneous inversion of uterus	1
Presentations—		Rupture of uterus	1
Face	2	Hæmatoma vulvæ	1
Face to Pubes	12	Morbidity (100.8°-T. and over)	184
Brow	2	Morbidity (Rotunda Estimation)	127
Breech and Footling	51	Mortality, maternal	6
Transverse and Oblique	6	Mortality, infantile—	
Compound	2	Died in Hospital	34
Twins	32	Premature	18
Prolapse of Funis	11	Recent	39
Hæmorrhage—		Macerated	52
Accidental	8	Infantile conditions—	
Unavoidable	3	Anencephalus	3
Post-partum	19	Hydrocephalus	1
Secondary	—	Spina bifida	2
Lacerated Perinæum, incomplete	455	Congenital umbilical hernia	1
Lacerated Perinæum, complete	4	Subcuticular Ecchymosis	1
Myoma of uterus	6	Ophthalmia	2
Deformed pelves	12	Talipes	4
Atresia of vagina	1	Deformed hands	1
Operations—		„ feet	1
Induction of labour	3	Icterus	8
Version	10	Cleft palate	2
Forceps	82	Mastitis	2
Cæsarean section	4	Fœtus papyraceus	1
Manual removal of placenta	26	Born in asphyxia pallida	7

Table No. V.—*Accidental Hæmorrhage.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	Remarks
M. McA.	34, XI.	1904 Nov. 15	Concealed	None	Dead	3¼ lbs. of clots followed birth of child.
M. B.	41, XI.	„ 25	Mixed	Plugged	Dead; macerated	Concealed at first, then became external four hours before delivery. Premature child.

TABLE NO. V.—*Continued.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	REMARKS
A. K.	18, I.	1904 Dec. 26	Mixed	None	Alive	In labour. Clots before and after birth.
C. P.	23, II.	1905 Jan. 21	External	Plugged	,,	In labour.
K. S.	35, X	Mar. 24	,,	,,	,,	Not in labour. Labour was not induced by plugging Kept in bed as hæmorrhage recurred when she got up. Delivered herself, April 8th.
C. O'N.	30, VII.	Apl. 29	,,	Tight binder	,,	Hot vaginal douche. In labour.
B. C.	22, I.	Sept. 6	,,	Plugged	Dead; macerated	In labour.
E. G.	24, I.	Nov. 14	,,	Forceps	Alive	In labour. Hæmorrhage started during 2nd stage occipito-posterior. *Vide* "Forceps."

TABLE NO. VI.—*Placenta Prævia.*

Name	Age and Para	Variety	Period	Result to Child	Presentation	REMARKS
A. P.	28, IV.	Lateral	Term	D.	Vertex	Bleeding a fortnight irregularly; version; delivery in one hour.
P. C.	38, V.	,,	,,	A.	,,	Placenta could be felt, but after admission there was no hæmorrhage; delivery in five hours.
N. U.	28, V.	,,	8 months	D.	,,	Version; delivery in three hours.

Table No. VII.—*Cases of Contracted Pelvis.*

Name	Age	Para	Pelvic Measurements					Mode of Delivery	Result to Child	Remarks
			C. V.	Trans	Ext. C.	I.-C.	I.-S.			
S. F.	33	II.	7	11½	20	27	28	Spontaneous	Alive	Labour induced.
A. O'R.	29	I.	5¼	11	17	24¾	25	Cæsarean Section	Alive	
J. B.	34	IV.	6⅓	10⅓	—	25½	25⅓	Cæsarean Section	Alive	
M. T.	28	II.	7⅙	10	17	24	24	Forceps	Dead	
M. F.	26	I.	6	—	15¼	27	27	Cæsarean Section	Dead	
E. C.	41	XI	8	11¼	18	28	30	Spontaneous	Alive	Labour induced.
A. O'C.	36	I.	8½	—	18½	28	28	Forceps	Alive	Head above brim.
E. S.	36	IV.	9¾	—	18	27	24	Version	Alive	
E. F.	33	III.	8½	10	17½	27½	25	Forceps	Alive	Other deliveries, induced labour. This was full term.
A. P.	23	II.	7⅜	—	16½	28½	27	Cæsarean Section	Alive	Cæsarean Section, second time.
B M.	33	I.	7¼	11¾	17	27	25	Version	Dead	Face presentation.
M. C.	36	II.	9	—	—	—	—	Version	Alive	Prolapse of cord.

TABLE NO. VIII.—*Application of Forceps.*

Indication	No.	Dead Children	REMARKS
Delay in second stage, with danger to mother or child	66	3	One of the children was macerated.
Prolapse of cord	2	—	
Contracted pelvis	3	1	*Vide* contracted pelvis table, M. T.
Occipito-posterior	7	2	*Vide* ruptured uterus, one case. In another, patient 48 hours in labour. Os size of sixpence, dilated by Frommer.
Eclampsia	2	—	Os fully dilated. Head low down.
Cardiac and pulmonary disease	1	—	Patient in great distress. In second stage; pulse 120. Respirations 65. Cyanosis and orthopnœa.
Fibroid uterus	1	—	Large fibroid on right side of lower uterine segment. Pains very weak.
Total	82	6	

SUB-TABLE A.—*Showing No. of Pregnancy.*

I.-para	63
II.-para	5
III.-para	5
IV.-para	1
V.-para and over	8
Total	82

SUB-TABLE B.—*Showing Ages of Patients.*

17-25	21
26-30	33
31-35	15
36 and over	13
Total	82

Table No. IX. A.—*Morbidity* 100.8° *and over.*

Temperature	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
100.8° to 101.2°	1	6	4	3	3	1	1	2	7	3	2	3	36
101.2° to 102.2°	6	2	3	5	2	8	5	-	3	2	7	6	49
102.2° to 104°	3	6	4	1	4	2	4	3	2	6	3	6	44
104° and over		-	-	2	-	-	-	1	-	-	1	1	5
Total -	10	14	11	11	9	11	10	6	12	11	13	16	134
Percentage													7.03

Table No. IX. B.—*Temperature and Pulse over* 99° *and* 90.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total.
Temp. and Pulse over 99° and 90	10	12	8	6	13	10	12	16	8	11	11	10	127
Percentage													6.67

Table No. IX. C.—*Comparison of Morbidities.*

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Total.
No. of cases in which both Morbidities existed	7	10	6	4	5	5	8	5	2	7	9	10	78
No. of cases of 100.8° T. only	3	4	5	7	4	6	2	1	10	4	4	6	56
No. of cases of 99° T. and 90 P. only	3	2	2	2	8	5	4	11	6	4	2	—	49

For standard of Morbidity, as recommended by the British Medical Association, see general remarks on Morbidity.

TABLE No. IX. D.—*Day of occurrence of Temperature* 100.8° *and over.*

Day	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
1st	—	1	—	—	1	1	2	—	-	1	2	3	13
2nd	1	2	—	—	4	1	—	1	2	2	1	2	16
3rd	1	4	2	—	—	3	—	3	4	3	4	3	27
4th	1	—	4	5	1	4	1	—	3	2	2	3	26
5th	1	1	1	1	2	—	2	—	—	1	1	2	12
6th	1	3	—	—	1	1	2	1	—	—	1	—	10
7th	1	1	2	3	—	1	—	1	—	—	1	2	12
8th	3	—	1	—	—	—	3	—	1	1	—	—	9
9th	1	—	1	—	—	—	—	—	—	1	1	—	4
10th, &c.	—	2	—	2	—	—	—	—	—	—	—	1	5
Total	10	14	11	11	9	11	10	6	12	11	13	16	134

TABLE No. IX. E.—*Day of occurrence of Temperature and Pulse, over* 99° *and* 90.

Day	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
1st	—	1	—	—	1	2	2	4	2	—	2	1	15
2nd	4	4	1	—	1	—	—	2	1	3	3	3	22
3rd		3	—	3	6	4	—	4	2	2	4	2	30
4th	2	1	2	—	1	3	3	4	2	2	—	1	21
5th	1	—	2	—	2	—	1	—	1	2	-	—	9
6th	1	1	1	—	1	—	1	1	—	2	2	—	10
7th	—	1	2	1	1	1	2	—	—	—	—	2	10
8th	1	—	—	1	—	—	3	1	—	—	—	1	7
9th	1	—	—	—	—	—	—	—	—	—	—	—	1
10th, &c.	—	1	—	1	—	—	—	—	—	—	—	—	2
Total	10	12	8	6	13	10	12	16	8	11	11	10	127

Table No. IX. F.—*Causes of Morbidity other than Uterine.*

Breast abscesses	2
„ inflamed	3
Bronchitis	1
Constipation	10
Eclampsia	2
Influenza	6
Phthisis	1
Pneumonia	1
Renal disease	2
Puerperal ulcer	5
Impetigo	2
Phlegmasia alba dolens	1
Cystitis	1
Venous thrombosis	2
Gum-boil and swelled face	1
Total ...	40

Table No. X.—*Maternal Mortality.*

Name	Admitted	Delivered	Died	Cause of death	Notes
M. C.	Nov. 11	Nov. 11	Nov. 14	Eclampsia	*Post-partum*
M. K.	May 24	May 25	May 25	Rupture of uterus	Rent plugged
M. K.	May 25	May 26	May 26	Eclampsia	—
S. O'K.	June 30	June 30	July 8	Septicæmia	Pan. Hysterectomy
A. D.	Sept. 18	Sept. 18	Sept. 26	Pneumonia	—
M. C.	Oct. 19	Oct. 20	Oct. 27	Septicæmia	—

ART. VIII.—*Two Cases of Infantile Hemiplegia.* By D. J. O'CONNOR, M.A., M.D., M.R.C.P.I.; Physician to the Mercy Hospital, Cork.

INFANTILE hemiplegia being a rather uncommon form of nervous affection, and the symptoms of the disease presenting somewhat different features in different cases, the following notes of two cases that have recently come under my notice may not be without interest:—

CASE I.—J. K., male child, aged three years and three months, was admitted to the Mercy Hospital, January 23, 1906. The family history was good. The father and mother and their immediate relatives were healthy, and five brothers and sisters of the patient were quite strong. Before the present attack the child's health was good, and he could speak and walk as well as other children of his age. On June 5, 1905—that is seven and a half months before his admission to hospital—the mother noticed that the child was very cross and restless, and used frequently wake out of his sleep. The date was fixed in the mother's mind by the fact that the child's grandfather, who lived in the same house, died on that day, and she was inclined to attribute the child's illness to shock caused by seeing so many visitors in the house. On that day he could speak quite plainly, and said "grandpapa there in bed," pointing to the bed in which his grandfather had just died. Next day it was noticed that the child could not stand, the right leg giving way under him; he could not hold the cup to drink, and he could not speak. Certain negative features of the case are of interest. There was no history of measles or scarlatina, of a fall or other injury, and there were no convulsions. The mother states that since that time the child has got fatter and stronger, that there is a slight improvement in his speech, and also, she thinks, a slight improvement in the condition of his limbs. When examined on admission the right arm and right leg were found to be partially paralysed, the arm being more affected than the leg. The knee-jerk on the affected side was increased, and Babinski's sign was present. But the feature of the case that attracted most attention was a condition of tremor affecting principally the upper limb on the affected side. There was a constant slight movement of the limb independent of voluntary effort, and even persisting during sleep. In the lower limb a similar condition was present, though here it was less noticeable. The tremor was more regular in character than is usual in these cases, and resembled the tremor of paralysis agitans. On voluntary movement, however, the muscular efforts were irregular and ataxic, and resembled the movements in a bad case of chorea. There was much weakness of the right leg, and though the patient could just stand he was unable to walk. When any small object, such as a pencil, was held before him he would always stretch forth his left hand to take it, but when told to take it in the right hand he would attempt to do so in the awkward manner I have mentioned.

This brings us to another interesting feature of the case. For while the child understood what was said to him he was quite unable to speak. When asked a question he would give a monosyllabic cry or grunt, which was quite unintelligible. The mother, however, states that his speech is not quite so bad as it was at first, and that she understands some of the words he uses. There was a change also in the child's mental condition. Previous to the attack he was quiet and cheerful. Since then he gives way a good deal to crying, and, indeed, he used to disturb the other patients so much by his almost constant whining that he had to be sent home after about a week. Considering the age of the child and the time that has elapsed since the attack, one would expect a greater improvement in the power of speech than has actually taken place. The probability, however, is that this condition will improve later on, and, perhaps, end in complete recovery. As regards the paralysis, it is too soon to speak. There was no shortening of the affected limbs at the time of examination, but even if this does not take place a considerable amount of loss of power is certain to remain.

In the second case some of the symptoms were thought to point to cerebral tumour, and the case was sent to the hospital under the care of my surgical colleague, Dr. J. Cotter, M.D., F.R.C.S.I., with a view to an opinion as to the advisableness of surgical interference. Dr. Cotter kindly asked me to investigate the case with him. As the patient was more advanced in years than in the previous case some of the symptoms, and especially the mental condition, could be determined with greater accuracy.

CASE II.—The patient, P. S., a boy, aged nine years, was admitted to the Mercy Hospital on May 3, 1906. The parents stated that when he was three years old he got a feverish attack, accompanied by convulsions, which recurred on several occasions for some days and then passed off. There was no history of measles or scarlatina. When the convulsions subsided it was noticed that the child's left arm and leg were paralysed. As time went on the paralysis became less marked, and ultimately the boy was able to walk and run pretty well. The upper limb did not improve to the same extent, and was of little use to the patient. The convulsions have recurred at irregular intervals from the time of the original attack up to the time of admission to hospital, averaging about one every month. The remarkable feature of the case was that not only were the original convulsions general in their nature, but all the subsequent attacks have been of the same character, and not confined to the affected side. When examined on admission the boy was found to have very good power in the leg, and could walk fast and run fairly well. However, when he walked fast or ran he would drag the left leg after him with a kind of circular movement, while the fact that this leg was one inch shorter than the other caused a noticeable limp. The knee-jerk on the affected side was excessive, ankle-clonus could be obtained, and Babinski's sign was present. The left upper limb was two and a half inches shorter than the other, was flexed at the elbow, and the fingers were bent on the palm. The face was unaffected, and the electrical reactions were normal. There was no tremor or athetosis, but on voluntary efforts the movements of the left hand were of a disordered character. The absence of vomiting, headache, and optic neuritis, the sudden onset of the paralysis and its improvement as time went on, and the generalised nature of the convulsive seizures, rendered the diagnosis of cerebral tumour untenable. The mental condition of the boy was of particular interest. Under ordinary conditions he was a bright, cheerful, intelligent lad, quick of comprehension, and ready in answering questions, though he was not as far advanced in his school studies as most boys of his age. But his emotions were very strong and very easily aroused. The day after his admission to hospital one of the other boys in the ward contradicted him on some trivial point, when he immediately seized a poker, hunted the lad around the ward, and would undoubtedly have injured him but for the intervention of the sister. After this incident his fellow-patients were more careful in their dealings with him, but on several subsequent occasions he displayed signs of anger quite out of proportion to the cause of his wrath. On the other hand, his risible faculties were quite as easily excited. Some humorous remark would send him into a perfect convulsion of laughter, which was apparently quite uncontrollable in character. On such occasions he would sometimes lie on the bed, or sit back in a chair, and, while his whole body shook, he would shriek with delight for, perhaps, five or six minutes, so as to be plainly heard in the adjoining wards. The remonstrances of the other patients were powerless to stop what was literally a paroxysm of laughter, and when the sister in charge reproached him he could only cover his head with the bed-clothes and continue the laughter under the clothes. The other boys in the ward were not slow to notice this peculiarity, and took great delight in saying or doing things which gave rise to these outbursts of mirth. When the sister appeared they would sit with grave faces, while the hapless patient vainly endeavoured to check his hilarity.

Considering the duration of this case and the large number of convulsive seizures that have occurred the condition of the patient is not unsatisfactory. Of course the mental outlook is not altogether reassuring. I think, however, that the generalised nature of the convulsions makes them more amenable to treatment by bromides than would be the case if the convulsions were localised, and treatment on these lines is being carried on at present.

ART. IX.—*A Note on the Opsonic Index.*[a] By BASIL BROOKE, M.B., B.A., Univ. Dubl.

MANY years have elapsed since Metchnikoff proposed his theory of phagocytosis. He held that the destruction of bacteria, which had found their way into the human organism, was to be explained by the action of the body cells and not by the conditions of the body fluids. He noticed that when a prepared injection of a culture was introduced into an animal, naturally or artificially immune, the bacteria were ingested by the leucocytes; and that these bacteria were not taken up as mere dead matter he considered to be proved by the fact that an exudate, containing bacteria within the cells, but none free in the fluid, was capable of causing infection if injected into susceptible animals.

Recent works by Sir A. E. Wright and others have upset this theory and proved conclusively that the part taken by the leucocytes is one of subsidiary importance, that the predominant element in the process is the body-fluid, and that it is substances in it which, acting on the bacteria, enable the leucocytes to incorporate and destroy them. He was led to this result by finding that if *bacteria and blood-cells, washed free from their blood-fluid,* were mixed together and incubated, there was no result, but that if *serum* was added the blood-cells were found with bacteria within them, thus proving that, except in the presence of serum, phagocytosis did not occur. To this substance in the serum which engenders phagocytosis the name "Opsonin" has been given, the word being derived from the Greek ὀψώνεω "to victual," and meaning something which, acting on the bacteria, makes them palatable to the leucocytes.

Great practical importance attaches itself to these opsonins, and much successful work has been done on them, chiefly by Wright, who has proved that this discovery of the opsonic power of the blood is not merely a theory propounded to-day to be exploded to-morrow, but a discovery which has already cleared up many facts hitherto regarded as inexplicable. Moreover, as will be explained shortly, he has devised a comparatively simple method whereby the amount of opsonin in a patient's blood can be demonstrated. And it is interesting to note that the results obtained by Wright have been fully corroborated by other observers.

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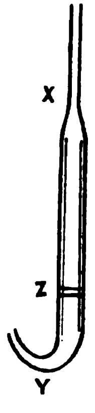
[a] Prize Essay read before the Dublin University Biological Association, Session 1905–1906.

The existence of such substances as opsonins was suspected long ago by Denys, Leclef, and by Mennes, but the credit of their actual demonstration rests with Wright and Douglas, and the results of their early investigations will be found in the Proceedings of the Royal Society, 1903 and 1904.

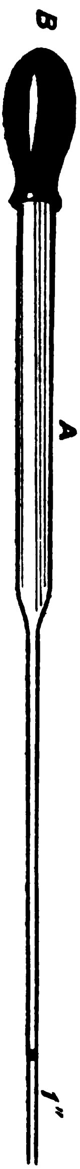
Investigations are being carried on at present by several bacteriologists in this country, and the following is the method used in our own laboratory for demonstrating the presence of opsonins. I adhere rather closely to detail in my description as I wish to make this paper as practical as possible :—



(1.) A sufficient quantity of blood is taken from the patient in a glass tube shaped as in diagram—x is the upper end of the tube, and y the lower. The tube is warmed in the upper part above the blood. As the air cools, its contraction causes the blood to run into the upper portion. Both ends are rapidly sealed off in a flame, and the tube is placed in a centrifuge with the y end uppermost, hooked over the end of the centrifuge. The corpuscles sink towards x, and the tube being filed and broken across in the middle at z the *serum* is found on top.

(To procure the blood from the patient a flat packing needle is used, and a piece of rubber tubing serves as a tourniquet.)

(2.) *An emulsion* is made from a culture of the particular organism from the effects of which the patient is suffering. This is done by growing the organism on an agar slope and running in a 1 per cent. to 2 per cent. solution of salt into the test tube. Care must be taken not to use a stronger salt



solution, as the bacteria show a tendency to clump if this is done.

(3.) The next step is to obtain *serum-free corpuscles.* Some blood is procured, *not necessarily the patient's*, as was proved by Sir A. Wright by using the patient's blood-cells and then cells other than those of the patient, and finding the result in each case to be the same. A solution of a 1 per cent. citrate of sodium in normal saline is run into a test tube with the blood. This is well centrifuged, taken out, and the supernatant fluid is drawn off. Normal saline solution alone is then run in and the tube centrifuged again. The fluid on top is again drawn off and the process repeated till the corpuscles are obtained free from their serum.

Next we mix together equal parts of the *serum*, *blood-corpuscles* and *emulsion.* This is done very accurately by taking a glass tube (*A*), one end of which has been finely drawn out, and making a mark with a blue pencil, say, one inch from the fine end. A rubber teat (*B*) is then attached to the broad end of the tube and the air blown out of the tube, and serum drawn in up to the mark; the tube is then raised, a little air let in, and the process repeated in the case of the emulsion and blood-corpuscles. The contents of the tube are then blown out on to a slide, mixed together and drawn back into the tube, which, after the fine end has been sealed off, is placed in an incubating oven at 37° C. for fifteen minutes, *together with a control tube* containing equal volumes of the same emulsion, the same leucocytes, and a healthy serum. When taken out, the contents are blown on to a slide, and film preparations are made, any ordinary stain being used. The one used here being Leishman's stain, which is a mixture of methylene blue and rosin.

(A practical hint in preparing the slides is to rub them with fine emery paper; this scratches the slides slightly and enables the corpuscles to get a better hold on them.)

If the preparations are examined under an oil immersion lens the white-cells are seen with a number of bacteria within them. The number in several cells in the preparation made with the patient's serum is counted and an average struck. This number is compared with the number found per leucocyte in the control preparation made with the healthy serum, and the ratio thus obtained is known as the *opsonic index.* Thus, if the number in the patient's preparation be 4 per leucocyte, and that in the control 5, the opsonic index will be $\frac{4}{5}$ or .8.

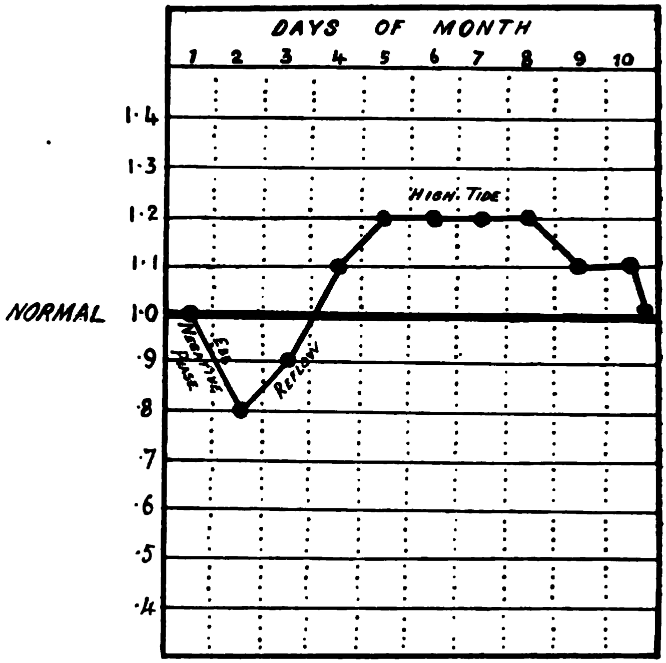
(In Wright's laboratory, blood is obtained from his assistants in the morning, which is allowed to clot, and the serum is used as the normal for the day.)

I have shown that opsonins act by making the bacteria more easily ingested by the leucocytes, and it must be remembered that in *this* way, and in no other so far as we know, is the opsonin a factor in immunity. It is *not* anti-toxic, *nor* is it (except in the limited sense in which I have described) bactericidal.

Let us now consider in detail what happens when a patient suffering from a bacterial disease is inoculated with a "vaccine" composed of the dead bodies of the same organism, and to do this I will refer to the diagram (from *The Practitioner,* Nov., 1905), taking a practical instance for the purpose of illustration.

A man suffering from phthisis is given subcutaneously a small dose, say $\frac{1}{1000}$ m.g., of Koch's new tuberculin—the resistance of his body is at first lowered. This lowering is represented in the diagram, and is called the "ebb" or "negative" phrase. It lasts for a variable time, and, if no more tuberculin is given, is followed by a steady rise in the opsonic power which reaches a point above normal, remains there for some time, and then falls. This is called the "reflow" and "maintained high tide." During the reflow the man's resisting powers are increasing, and during the maintained high tide they are working at a maximum. It is, therefore, obvious that the longer this high tide can be kept up the better it will be for the patient.

Now, the method of administering tuberculin, according to instructions issued with the bottle, is to give a small dose, and if there be no reaction, as estimated by the temperature, to repeat the dose in a larger quantity; if there is a reaction, to wait till the temperature falls, and then repeat the dose, and so on. Some cases in which this was done showed improvement, and it was thought that the long-looked-for cure for consumption had at last arrived. Unfortunately, however, other cases in which it was tried rapidly went from bad to worse, and died of general tuberculous septicæmia.



Referring to the diagram once more. Supposing that when the tuberculin is given, there is no reaction (that is, no rise of temperature), then, according to instructions, another and larger dose is given. If the opsonic power is on the ebb, this has the effect of lowering it still further, and if it happens to be *very* low, when the dose is given, the opsonic power will be reduced almost to zero, and general tuberculosis will result, the blood already containing as much poison as it can deal with. The question then arises: "When should the next dose be given?" It is obvious that if it be given during the reflow or at the beginning of the high tide it is unnecessary, inasmuch as the good effects of the former dose have not had time to act to full advantage, therefore it should be given as soon as the high tide shows signs of falling. This dose is in its turn followed by an ebb, reflow and high tide, and then "the successive doses must be so apportioned, and the time so spaced, that gradually the spring-tide mark of immunity is reached, a point well above the normal line of resistance. It is found that this can be maintained after a while with little difficulty and with increasing time spaces for inoculation."

By following out the information given us by the opsonic curve we have at our disposal a means of estimating the exact effect of our doses and regulating their amount and the time at which they should be given accordingly, and the old unscientific method of groping in the dark is done away with.

Let me briefly review our knowledge of opsonins:—

(1.) *They are, as far as we know at present, specific*—*e.g.*, a person's index for tubercle may be low, and yet be high, for staphylococci, and *vice versâ.*

(2.) *They are normally present in the blood or serum*, and may exist in greater or less amount.

(3.) *An increased production is stimulated by the invasion of the body by bacteria.* Our knowledge of this last has led to the successful increase of a patient's opsonins by the injection of known quantities of bacteria.

(4.) *They are destroyed if subjected to a temperature of 60° C. for fifteen minutes.*

(5.) *They act on the microbe and do not merely stimulate the leucocyte.* This was shown (*a*) by heating serum and so destroying its opsonic content, digesting this with bacteria and afterwards with leucocytes, and getting practically no result; (*b*) by digesting unheated serum with bacteria for a certain time, which was then heated (the opsonin being thus destroyed) and digested with leucocytes, when phagocytosis was found to be considerable. In both these cases the opsonin was destroyed *before adding the leucocytes*, so that any result must have been due to its effect on the bacteria.

(6.) *The opsonic content is independent of temperature or leucocytosis.*

The practical importance of our knowledge of opsonins and the results it has led to may be studied under the headings of—(*A*) Diagnosis and Prognosis; (*B*) Treatment; and in dealing with these we must consider whether we have a low, normal, or high index to deal with.

(*A*) *Diagnosis and Prognosis.*—Much more evidence will have to be collected before their diagnostic and prognostic value can be put on a firm basis, and for the present we must content ourselves with probabilities. Bulloch has shown that an index below .8 is abnormal, and that there is not much variation in the normal index; it ranges between .8 and 1.2.

In order to gain *any* assistance from our study of the opsonic content *our observations must be made at successive periods, one individual observation being of no value whatever.*

If in a case we find—

i. *A low opsonic index*, this may be due to (*a*) the index being *normally low*; in this case it is probable that it is due to a hereditary or acquired predisposition to the disease, and may be taken to mean that the patient should avoid anything which would render him liable to infection; (*b*) the patient may be *in the negative phase*, which is itself due to auto-inoculation—*e.g.*, in a case of active phthisis poison is being absorbed at intervals, and as each dose is absorbed the resistance falls, and it may be that during this fall the observation is made; (*c*) *infection may have taken place* and be proving too much for the patient.

ii. If we find *a normal index*, which remains normal at each observation, we may say that the patient is not infected.

iii. If a *high index* is found, this may again be due to (*a*) *auto-inoculation*, the observations having been made during the high tide; but if it be found high on several occasions the presumption will be that (*b*) infection *has* taken place, and the body is resisting the disease.

(*B*) *Treatment.*—In dealing with the treatment of bacterial diseases our first consideration must be to determine whether the disease is *general* or *local*. This is most important, for if we inoculate *in the former* we are merely pouring poison into an organism already loaded with it, and are doing actual harm. It is in the *latter* class of cases—namely, in the localised infections—that the inoculation method promises to be a success, and those chronic cases, such as lupus and acne, which are met with in everyday practice and resist treatment so persistently, are the cases in which the most beneficial results will be achieved. It seems an extraordinary thing that a person may suffer from a disease for years and yet be completely cured by injections of the very microbe which has been causing the trouble ; but—*and I want to emphasise this fact*—these lesions must be regarded as almost shut off from the rest of the body, and so the bacteria within them cannot readily make their way into the general circulation, and by so doing cause an increase in the opsonic power.

The *essential of the inoculation method* is to choose suitable cases—*i.e.*, chronic cases—and to regulate our inoculations according to the opsonic curve. To do this, observations should be made while the patient is resting, more especially in phthisis, as it has been found that exercise alters the index, apparently by auto-inoculation.

What is the therapeutic value of a *low index* ? It can probably be raised by vaccines. For example, it is a matter of common knowledge that some cases of tubercular peritonitis have recovered by simply opening up the abdomen and giving free vent to the fluid in it. How do we account for this ? It is found that the fluid in the peritoneal cavity has practically no opsonic power, while if the blood serum be tested its index may be fairly high. When the abdomen is opened and this fluid of low-resisting power let out, its place is taken by fluid which has the same opsonic power as the blood, and if this is strong enough to act on the tubercle bacilli, and so enable the leucocytes to destroy them, the patient recovers.

Consider also what happens when an abscess is opened. It is not merely the letting out of the pus and reducing the pressure which leads to restitution ; but added to this is the fact that a fluid of comparatively high opsonic power is allowed to take the place of one in which the resistance has been reduced to a minimum.

Supposing we find the index in a case of tubercular peritonitis to be low, opening the abdomen in such a case would, according to our reasoning, be of little value, but if we raise the index by vaccination the patient will in all probability recover.

Bulloch states (*Pract.*, Nov., 1905) that he has treated eleven cases of staphylococcic infection by the inoculation method. Of these nine were cured, the other two at first showed improvement, but have shown a tendency to relapse. One of the cures was a case of facial acne of seven years' standing which had defied all other therapeutic measures. This case received nine inoculations, spread over a period of three months, and a complete cure was effected. The writer also records a case of pneumococcic empyema which, nine weeks after operation, showed no tendency to heal; but after three inoculations a complete cure resulted.

Many other successes with the inoculation method have been recorded, but time will not allow of my going more deeply into this interesting part of the subject. Still I hope that these few cases will be sufficient to show that, if properly carried out, the inoculation method is one with a great future. Nevertheless, I do not wish to hide the fact that it is a method which requires great care and patience, and, above all, takes up a great deal of time, more time in fact than the general practitioner can give up to it, and for this reason it must remain in the hands of specialists. That, however, is no reason for saying that the method will never be practicable.

The treatment of tuberculosis is one of exceptional interest to us in this country, where one is daily coming in contact with the awful havoc wrought by it, and if something, however little, be done towards its amelioration there will be much for which to be thankful.

In conclusion, I would say that, whatever results the inoculation method may bring forth in the future, the work done by Sir A. E. Wright (who is a member of Dublin University), in opening up new fields, entitles him to be ranked with those distinguished scientists to whom the world owes so deep a debt of gratitude.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures on Tropical Diseases: Being the Lane Lectures for 1905, delivered at Cooper Medical College, San Francisco, U.S.A., August, 1905. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. (Aber.), F.R.C.P. (Lond.), F.R.S., Hon. D.Sc. (Oxon.); Medical Adviser to the Colonial Office; Lecturer, London School of Tropical Medicine, St. George's Hospital Medical School, &c., &c. London: Archibald Constable & Co. 1905. 8vo. Pp. viii + 230.

We crave pardon of the distinguished author of these lectures for a somewhat belated notice of a notable work.

It is, perhaps, an open secret that reviewers do not always—perhaps do not often—read through the books which it is their duty to criticise. Well, we can honestly say that we have read this volume from cover to cover, with profit and pleasure.

When the authorities of Cooper Medical College invited Sir Patrick Manson to deliver the Lane Lectures for 1905, they, no doubt, conferred an honour on a distinguished British physician. When they chose the theme of Tropical Diseases as the subject of the lectures they paid a further compliment to the lecturer, who is one of the highest living authorities on the subject; but they also showed a keen insight into the need for a wider study of tropical pathology in the vast Republic of North America. A study of these lectures shows that Sir Patrick Manson rose to the great occasion and proved himself a worthy exponent of British Medicine in its tropical aspect. In his first lecture he grasped the situation—" The expansion of America tropicwards will undoubtedly bring in its train great material prosperity to this city (San Francisco). With this prosperity will come trials, duties, responsibilities. Not the least important of these are those having reference to disease and to the preservation of health in tropical countries. The establishment of those admirable and fruitful research laboratories in the Philippines, the splendidly successful efforts made in Cuba to banish yellow fever, and the elaborate sanitary arrangements devised for the Panama Canal route, show that the Washington authorities thoroughly appreciate this" (page 3).

The course consisted of ten lectures. Of these the first six in order were devoted to special maladies—epiphytic disease; ankylostomiasis, dracontiasis; endemic hæmoptysis; bilharziosis; filariasis; malaria; trypanosomiosis and sleeping sickness; febrile tropical spleno-megaly (Kala-Azar). The seventh and eighth lectures dealt with the diagnosis of tropical fevers. In the ninth the treatment of fevers and fluxes was concisely described, and in the tenth certain problems in tropical medicine were discussed.

The description of the various diseases named above is most graphic. The life-history of the parasites, to which most of them are due, reads like a fairy tale. It illustrates the boundless resources of Nature in maintaining the life of species, and pays a splendid tribute to the patience, scientific zeal, and masterly acumen with which the students of tropical diseases have worked out the great problem of the geographical distribution of those maladies.

Sir Patrick Manson seems not to have a very high opinion of modern surgery and of surgeons. "Above all," he writes, "in the case of bladder bilharziosis he (the patient) must, so long as possible, keep out of the way of the surgeon, who, at all events in a good many instances, is only too keen to get an excuse for passing instruments into the bladder." He proceeds to tell the following story:—"During the Boer war many of our English soldiers contracted bilharzia in South Africa. It is endemic in Natal and in parts of the Transvaal. One poor fellow I saw, who, having escaped the Boer bullets, developed symptoms of bilharziosis on the return voyage to England. On landing, and in ignorance of the nature of his complaint, he consulted a surgeon about the urinary irritation and slight hæmaturia he was suffering from. There was no microscopic examination of the urine. The pain and the blood suggested stone. A sound was introduced. No stone was discovered, but a cystitis was communicated, and, of course, increased the suffering. Another surgeon was now consulted. He unfortunately discovered some condyloma-like excrescences around the anus. Now, bilharzia produces not only papillomata inside the anus, but at times outside the anus as well, and even on the perineum and groins. The surgeon was not aware of this; but ignoring the urinary trouble, and in spite of the protest of the soldier that such a thing was impossible, he diagnosed syphilis, and prescribed calomel. The outcome of the combined treatment was cystitis and severe salivation and syphilophobia. In examining the urine microscopically there was no difficulty in recognising the bilharzia ova, and on excising a piece of condylomatous growth the parasitic nature of these was made equally apparent. A little knowledge and a little caution and trouble would have spared the poor man much suffering and some expense."

The volume abounds with shrewd observations, the outcome of an unrivalled experience of tropical diseases, in many climes, through many years. We can instance but a few. It seems that, although the Leishman body is intimately associated with Kala-Azar, or tropical spleno-megaly, a fatal disease, it is also intimately associated with Oriental Sore, an absolutely benign disease, and known locally as Bagdad Boil. Now it has been remarked that Oriental Sore is peculiar to camel-using countries, and it is suggested that somehow the disease is contracted from camels, much in the same way that the vaccine disease is contracted from bovines. Sir Patrick Manson goes on to say that "if the Leishman body of Oriental Sore be specifically identical with the Leishman body of tropical spleno-megaly, it must somehow have been deprived of its virulence; and I would suggest that this reduction of virulence has been effected by passage through the camel, just in the same way as the virus of small-pox is deprived of its virulence by passage through the cow. If the vaccinia virus protects against small-pox, may it not be that Oriental Sore virus would protect against tropical spleno-megaly, against Kala-Azar?" (page 148).

In discussing the diagnosis of malaria—a condition too often assumed on insufficient grounds to be present—the author asserts (page 160) that "although tertian and quartan periodicity are absolutely pathognomonic of malaria, quotidian periodicity is of no value whatever as a diagnostic sign for or against this infection." But this dogmatic statement is discounted in the very next paragraph, when Sir Patrick, contrasting the quotidian fever of septic processes with a malarial paroxysm, observes "there is ground, therefore, for the presumption that a quotidian fever setting in before noon is malarial." He justly remarks that no diagnosis of malaria can be said to be complete unless confirmed by a microscopical examination of the blood.

Sir Patrick Manson has not much faith in the serum diagnosis of Mediterranean fever. He was asked to see a gentleman who some months before had been operated on for middle-ear disease. After recovering from the operation he was sent to the Mediterranean to recruit. While there, febrile symptoms set in. After a stay of two months in Naples, and getting no better, he was brought home to London. Sir Patrick then saw him and got the history of chronic fever contracted in the Mediterranean. He submitted some of the patient's blood for examination at two clinical laboratories of repute, with a request for diagnosis as to Mediterranean fever and as to typhoid. Next day came a report from Laboratory "A"—"Malta fever reaction, no typhoid." On the strength of this he gave a favourable prognosis. The following day Laboratory "B" reported—"Typhoid fever reaction, no Malta fever." To make sure Manson sent another specimen of the blood to Professor, now Sir A. E., Wright of Netley, who in due course very courteously replied—"No Malta fever, no typhoid fever!"

It appears that a Commission of the Royal Society which has been studying Mediterranean fever in Malta has ascertained that a large percentage of the goats in that island are infected with *Micrococcus melitensis*, and that the milk of the infected goats contains this organism. The fresh milk supply of Malta is derived entirely from goats, and Manson asks the pertinent questions whether this fact may not account for the great prevalence of Mediterranean fever in Malta, and whether it would not be wise to withhold unboiled goat milk from the dietary of Malta fever cases? (page 195).

The author's remarks on the diagnosis of hepatic abscess should be carefully studied by physicians practising at home, for the lesion in these days of world-wide travel is by no means uncommon in these countries. The grounds for diagnosis are—" a history of dysentery, evening rises of temperature with night sweats, enlargement of the hepatic area, and tenderness or pain. This combination almost invariably indicates abscess of the liver; its certainty demands exploration."

The above are a few only of the singularly interesting facts and observations with which this volume abounds. The work is handsomely brought out and is fully and well illustrated. There are a few spelling slips, such as " diptheritic " (page 200), and " opthalmology " (page 224); and on this latter page the barbarism " speciality " for " specialty " occurs. But the blemishes are very few, and, taking it in its entirety, this work must be regarded as a classical contribution to the ever-growing literature of tropical disease.

J. W. M.

The Frog: an Introduction to Anatomy, Histology and Embryology. By the late A. MILNES MARSHALL, M.D., D.Sc., M.A., F.R.S. Edited by F. W. GAMBLE, D.Sc. Ninth Edition. Revised and Illustrated. London: David Nutt. 1906. Pp. 172.

WE have had on several occasions to notice successive editions of this book. Its reputation is so well established and its usefulness as a guide to the student commencing the study of zoology is so widely recognised that there is little left for the reviewer to do except to announce the appearance of a new and improved edition. In the present issue the alterations from former editions will be found chiefly in the chapter on development, which has been thoroughly revised by the editor, and to which many new figures have been added, including several of the admirable drawings from Professor Marshall's " Vertebrate Embryology." The plan of the book remains unaltered. The different kinds of type in which it is printed greatly facilitate reference, and there is a good index. The illustrations are very numerous, well chosen, and excellently reproduced. In short, the book is one which cannot be too highly recommended to every student of biology.

Archives of the Middlesex Hospital. Vol. VII. Fifth Report from the Cancer Research Laboratories. Edited for the Cancer Investigation Committee by W. S. LAZARUS-BARLOW, M.D. London: Macmillan & Co. 1906. Pp. 217.

IN this volume sixteen papers are contained. We have first tabulated synopses of the *post-mortem* examinations and operations in cases of malignant disease during the year 1905. The tables drawn up by the Director of the Laboratories, Dr. Lazarus-Barlow, and his assistants contain an immense mass of information clearly arranged, and show the large amount of material which the workers in the Laboratories have at their disposal.

Dr. Victor Bonney contributes an interesting research on gametoid types of mitosis in the so-called gonorrhœal wart. He shows that, as this type of mitosis is found in the semi-malignant intracystic papilloma of the ovary and in the gonorrhœal wart, it cannot be looked on as peculiar to the cells of malignant new growths. All the cells, however, presenting this type of division seem to have in common the power of secondary local implantation. From the present and previous work the author inclines to the view that the gametoid type of division is "symptomatic of a condition of independent existence on the part of the cell rather than a causative factor in the production of the neoplasm."

Dr. Lazarus-Barlow details experiments on the precipitin reaction got by injecting rabbits with the juice expressed from new growths, and Mr. Hector Colwell makes similar experiments, in which alkali proteids were used for making the antiserums. Dr. J. J. Douglas discusses the question of the formation of specific precipitins, and concludes that a precipitin specific to cancer is not likely to be demonstrated, at least by the methods hitherto followed.

An interesting case of disseminated melanotic sarcoma is described by Mr. W. Sampson Handley, in which a careful study is made of the part taken by the lymphatics in the extension of the disease, a comparison is drawn between the mode of spread followed by cancer and melanotic sarcoma, and the principles are laid down which ought to guide the operator in dealing with cases of the latter disease.

Mr. Walter Ball writes a rather disheartening note on the therapeutic measures used in the treatment of carcinoma in the cancer wards during 1905. The substances used were violet leaves, externally and by the mouth; betel leaves, local application; uranium salicylate given internally in grain doses; caustic paste, consisting chiefly of zinc sulphate; and subcutaneous injection of a fluid preparation of radium. None of these methods of treatment gave beneficial results.

A very interesting paper by Dr. Lazarus-Barlow follows on the histological diagnosis of the endotheliomata. During the years 1900–4 out of 766 cases of malignant diseases 59 were diagnosticated as endothelioma. They formed 8 per cent. of the tongue cases, 10 per cent. of the uterus, 10 per cent of the breast, 10 per cent. of the liver and bile passages, and 7 per cent. of the malignant diseases primarily affecting bone. The cases diagnosticated as endotheliomata showed an abnormally large number of metastases—82 per cent.

Dr. Victor Bonney's paper on chorion epithelioma of congenital origin is of great value and interest. He describes a case in a male in which the primary growth was in the great omentum with secondary deposit in the liver, the histological characters of which, beautifully illustrated in seven plates, closely resembled that of a chorion epithelioma. A description of such tumours is given which, with a synopsis of previously recorded cases and an able discussion as to the nature and origin of such tumours, make this paper a most valuable contribution to pathology.

Then follow several statistical studies of malignant disease affecting different parts, founded on the records of the Middlesex Hospital—menstruation, childbirth and cancer—by Mr. Walter Ball; malignant disease of the lip, by Mr. C. W. Rountree; malignant disease of the tongue, also by Mr. Rountree; primary cancer of the œsophagus and lower pharynx, by Mr. F. W. Wright; primary malignant disease of the stomach, by Mr. Hector Colwell; and cancer of the uterus, vagina and vulva, by Dr. W. Lloyd Andriezen and Mr. Archibald Leitch.

The last paper is by Dr. Lazarus-Barlow. It has been noticed that many cases of malignant disease have occurred among persons much exposed to X-rays. Many substances, such as clay pipes, various tar products, and other matters, have been looked on as causing cancer by contact with the skin. It was desirable to see whether these bodies could have a common causative factor with the X-rays. Accordingly, their electrical and photographical phenomena were investigated. For the details of the experiments, which are interesting, we must refer to the paper. The writer thus sums up his results:—"Although the substances, clay-pipes, paraffin-wax, pitch, gall-stones, and soot, have certain properties, either electrical or photographic, which are apparently identical with properties possessed by recognised radio-active substances, it is impossible to regard them as radio-active substances, at least, in the present acceptation of the term. Nor is it as yet possible to say whether the property of retarding the discharge of an electroscope, which has been shown to exist under a variety of conditions, is a specific inherent property that is at present unrecognised."

Zeitschrift für angewandte Mikroskopie (und klinische Chemie) mit besonderer Rücksicht auf die mikroskopischen Untersuchungen von Nahrungs—und Genussmitteln, technischen Producten, Krankheitsstoffen, Mikroorganismen, Schimmelpilzen und Diatomaceen. In Verbindung mit Dr. HENRI VAN HEURCK. Herausgegeben von G. MARPMANN. Elfter Band. Leipzig. 1906.

THIS journal, although in existence for several years, is not so well known in this country as it deserves to be. It appears monthly, each number consisting of two sheets, 32 pages. The subscription price is 12 marks yearly; single numbers cost 1.50 mark.

In arrangement it somewhat resembles the familiar *Centralblätter*. Each number contains original articles, abstracts, notices of books, price lists, and some medical news. The original articles are somewhat longer than is usual in the *Centralblätter*, and the abstracts not so numerous.

As its title indicates, the subjects dealt with are very numerous, but, so far as we can judge, they are interesting and practical. Very useful are a series of articles entitled Beiträge zur practischen Mikroskopie by the Editor, G. Marpmann.

We feel sure that this periodical requires only to be known in order to gain a wide circulation among the many microscopists and hygienists of this country.

Sex and Character. By OTTO WEININGER. Authorised Translation from Sixth German Edition. London: Heinemann. 1906. 8vo. Pp. 356.

THIS book is a downright lunacy certificate, which the writer may be said to have signed with his own blood, after the manner of the demoniacs of old, since he committed suicide within a few years of its completion. The first edition is said to have appeared during Weininger's twenty-first year, and he put an end to himself at the age of twenty-three and a half years. The first thing that strikes the alienist is the singular resemblance of the author's lucubrations to the voluminous infertile productions which bulge the pockets of innumerable members of the certified class. There is the same vagueness, the same self-assertion, the same tendency to make the most positive statements and to regard mere statement as proof, the same prophetic unction, and the same absolute barrenness of any real thought underlying the froth of verbiage.

We are told, in the publisher's note to this work, that it "is undoubtedly one of those rare books that will be studied long after its own times, and whose influence will not pass away, but will penetrate deeper and deeper, compelling amazement and inviting reflection in steadily expanding circles." In a still more thrilling sentence it is hinted that the author committed suicide because he "could no longer bear the burden of his own ghastly knowledge." We turn to the text and we find just the kind of cynicism that we should expect from a dirty boy—"Woman is only sexual, man is partly sexual, and this difference reveals itself in various ways. The parts of the male body by stimulation of which sexuality is excited are limited in area and strongly localised, whilst in the case of the woman they are diffused over her whole body." Again, we hear—"And so it happens that a man can know about his sexuality, while a woman is unconscious of it, and can in all good faith deny it, because she is nothing but sexuality, because she is sexuality itself." Is this twaddle some of the "ghastly knowledge" which we are led to expect? "Man," we are informed, "can enter into whatever sexual relations he desires . . . He can play the part of Don Juan or a monk." It does not seem to have occurred to the intelligent author that woman "can play the part" of Messalina or a nun. Occasionally poor Weininger is really very funny, especially when he talks *ex cathedrâ*—"It would be very absurd to discuss the claims to genius of such men as Anaxagoras, Geulincx, Baader, or Emerson. I deny genius to such unoriginally profound writers as Angelus Silesias, Philo and Jacobi, or to original yet superficial persons such as Comte, Feuerbach, Hume, Herbart, Locke and Karneades." Cry you mercy! where is "our Elijah Pogram?" But perhaps that illustrious man was only as eminent as Hume, and "it is not very much to be the first of English philosophers."

Woman, poor thing, is disposed of, if possible, more easily than English philosophy—"And how then could a soulless being possess genius? The possession of genius is identical with profundity; and if any one were to try to combine woman and profundity as subject and predicate, he would be contradicted on all sides. A female genius is simply a contradiction in terms, for genius is simply intensified, perfectly developed, universally conscious maleness." *Quod erat demonstrandum.* This again is very comic—"That the mother cares only for the life of her own race is plain from the absence of consideration for animals shown by the best of mothers. A good mother, with the greatest peace of mind, will slaughter fowl after fowl for her family." This is quite as much to the purpose as Mr. Sergeant Buzfuz' remarks on chops and tomato sauce and Mrs. Sander's statement that her husband called her a duck. In discussing motherhood and prostitution (the poles of female life, according to this prurient adolescent) a casual parenthesis informs us that politicians are prostitutes. The gibe is probably as old as the beginning of human society—no matter that its acceptance is clean contrary to the main argument of the chapter.

We must not give much more time to this sad stuff, which ought never to have been published, but we cannot refrain from presenting our readers with a few gems of "ghastly knowledge" for their souls' comfort. Kant "was so little erotic that he never felt the kindred desire to travel." Richard Wagner, the musician, was "the greatest man since Christ's time," and "Parsifal" is "the greatest work in the world's literature." "Woman is incapable of desiring virtue in a man;" she is, moreover, "essentially a phallus worshipper." Most German dements, and unfortunately, we fear, a few Germans who do not belong to that category, are antisemites, and so our poor author introduces a chapter on "Judaism" into this work without any particular apology. It is as silly as all the rest—full of platitudes and commonplaces dressed up as paradoxes. Here is a specimen—"Those who have no soul can have no craving for immortality, and so it is with the woman and the Jew."

It were the height of futility and even of inhumanity to criticise with severity, under ordinary circumstances, the writings of a person of unsound mind, but when such an individual is cried up as a philosophic and scientific genius, and when books are written as commentaries upon him, it is really incumbent on those who do not admire unscrupulous advertisement and flatulent bookmaking to enter a protest and to point out the true nature of his work.

RECENT WORKS ON ANÆSTHETICS.

1. *Anæsthetics:* A Practical Handbook. By J. Blumfeld, M.D. Cantab. Medical Monograph Series, No. 7. Second Edition. London: Baillière, Tindall & Cox. 1906.
2. *Guide to Anæsthetics, for the Student and General Practitioner.* By Thomas D. Luke, M.B., F.R.C.S. Ed. Third Edition. Edinburgh and London: William Green & Sons. 1906.

3. *Notes on Local Anæsthesia in General Surgery.* By J. W. Struthers, M.B., F.R.C.S. Ed. Edinburgh: Wm. Green & Sons. 1906.

1. Dr.. Blumfeld has taken the opportunity of the issue of a second edition of his useful little work to describe the use of ethyl chloride, a subject which was barely mentioned in the first edition. A new chapter has been added dealing with the use of ethyl chloride, as well as some additional matter on the ethyl chloride and ether sequence. The methods recommended for using this drug are both simple and efficient, and we are glad to see that Dr. Blumfeld does not consider a special inhaler for ethyl chloride necessary. The face-piece and bag of a Clover's inhaler will give quite as satisfactory results as any of the more elaborate and specially designed inhalers. Many writers have recently urged the necessity of administering ethyl chloride only when the patient is in the recumbent posture, but we note that Dr. Blumfeld considers that "the patient may be either lying or sitting, in accordance with the operator's requirement." This is a matter of some considerable importance, for if the recumbent posture is necessary the field of usefulness of the drug, in dental cases especially, will be greatly lessened. Our own experience would lead us to agree with Dr. Blumfeld, but we consider the matter deserves fuller investigation.

This book will form a valuable addition to the student's library, and a study of it will ensure that he starts at all events with a knowledge of correct principles and methods of the administration of anæsthetics.

2. It is just a little over a year since a review of the previous edition of Dr. Luke's book appeared in these columns, and the appearance now of a third edition goes far to justify the belief then expressed that "the book will run through many editions." The present edition, though not increased in size, is in many respects a great improvement on the former, for not only have some minor errors been corrected, but some other changes have been introduced, which are a great improvement. The least satisfactory part of the book is the chapter dealing with local anæsthesia. This is not to be wondered at, when we remember that the specialist in

anæsthetics is rarely if ever called on to assist in the production of this form of anæsthesia. The teaching given, in consequence, lacks that element of personal experience which is so evident and valuable in the other parts of the book. It would, we believe, be better if the technical details of this subject were left to works on surgery and the space devoted to their description utilised for a more comprehensive discussion of the indications for their use. Dr. Luke has rendered many services to anæsthetists, and not the least of them is the book before us, which enables teachers to place in the hands of their students a book which is at once comprehensive, concise, and correct in its teaching.

3. THE object of Dr. Struthers' little book is to bring before English readers the subject of local anæsthesia. In recent years a very large amount of work has been done on this subject by foreign surgeons, but the various methods devised for producing local anæsthesia appear to have had little favour in this country. We believe that we are correct in saying that few surgeons in this country are at all familiar with either the scope or the limitations of local anæsthesia as defined by recent investigation. The work of Braun, Reclus and Marcinowski is little known, and few, save dentists, oculists, and throat specialists, have made any serious attempt to prove the value of cocaïn. Dr. Struthers, in the work before us, gives a very useful and concise epitome of the present state of knowledge on this subject, and we shall be much surprised if, as a result of his work, the use of local anæsthesia does not become much more general. We fully agree with Dr. Struthers with respect to the difficulty in laying down general rules as to the cases in which general or local anæsthesia is to be used. There are two classes in which the decision is simple enough. Those patients whose condition contra-indicates the administration of a general anæsthetic should, if possible, be given the benefit of local anæsthesia if operation is necessary. Again, there are certain operations which, from their nature, are unsuitable for local anæsthesia, and in which this method cannot be expected to give satisfactory results. There remains, however, the very large class in which either one or other method may be expected to give good results, and

here, as our author says, "everyone must judge for himself." In our opinion general anæsthesia should have the preference where a competent anæsthetist is obtainable, but if such an assistant cannot be obtained both surgeon and patient will be better served by local anæsthesia.

We strongly recommend a careful study of Dr. Struthers' book to all operating surgeons, and we believe that there will be few of them who will not derive much information from it. The book itself is well and clearly written, and contains a vast amount of information in a small space, while the reference notes will greatly facilitate anyone who wishes to study the experimental evidence on which the conclusions it contains are based.

T. P. C. K.

The Care of Children: Practical Hints for Mothers and Nurses at Home and Abroad. By ROBERT J. BLACKHAM, D.P.H. (Lond.), Captain, Royal Army Medical Corps; Examiner, St. John Ambulance Association; Member of the Honourable Society of the Middle Temple; Fellow of the Obstetrical Society; Fellow of the Incorporated Society of Medical Officers of Health. Revised and enlarged Edition. London: The Scientific Press. 1906. Pp. 84.

LES enfants sont ce qu'on les fait—this is the apt quotation on the title-page of an unpretentious, yet admirable, guide to the management of infants and older children. The keynote is struck when the author on the threshold insists that "mothers should, above all things, understand that the proper food for the first nine months of a child's life is its mother's milk." "If the mother has not sufficient milk she should eat as much nourishing food as possible, and take a cup of milk, egg and milk, milk gruel, or some strong soup, with bread, half an hour before the baby is put to the breast. Stout is *not* necessary for a nursing mother, and the pernicious habit of drinking stout during the morning has nothing to recommend it" (page 2). "If for any reason a mother is unable to nurse her child entirely, she should *not* wean it, but augment her own supply with cow's milk, diluted according to the table given below." This Table will be found at page

4, and is so simple as to be easily understood by any nursing mother.

The nine chapters contained in this little book deal in order with food, drinks and medicines, clothing, cleanliness, rest and exercise, infectious diseases, the nursery, nursery "First Aid," and nursery cookery. In the last chapter will be found a number of recipes, which, the author reminds mothers, "are to be cooked *for* but not *in* the nursery." Whey is "an invaluable preparation"—we agree in this opinion, but its nutritive value is low, and we think the author should not have omitted all mention of egg-water, or albumen water, which given with an equal quantity of whey is most digestible and extremely nourishing.

Young mothers and nurses cannot do better than study this really valuable and practical guide to the care of children.

On the Relation of Diseases of the Skin to Internal Disorders. By L. DUNCAN BULKLEY, A.M., M.D. London: Rebman. 1906.

DR. BULKLEY is a prolific writer, and has been long identified with the study of dermatology. The present book embodies four lectures delivered to physicians at the New York Skin and Cancer Hospital in 1905. In it Dr. Bulkley seeks to enforce the doctrine that in discussing the ætiology and treatment of diseases of the skin we are bound to look deeper than to purely local causes and local treatment, which have always been the keynotes of the Vienna School of Dermatology.

The author has devoted considerable attention to urinary excretion in connection with diseases of the skin, and has had many thousand analyses carried out in his laboratory. As yet, however, the net results are disappointingly small, and it is not possible to make definite statements. In a chatty, if somewhat discursive, style Dr. Bulkley scans diseases of the skin in relation to disorders of the digestive, excretory, and respiratory organs; to the nervous, circulatory, and sexual systems; to syphilis, &c.

While it can scarcely be said that he brings forward novel or original ideas, Dr. Bulkley undoubtedly adduces considerable evidence, drawn chiefly from his own experience, of the intimate correlation between cutaneous affections and constitutional disorders, and his vigorous protests against a too narrow view of dermatology are not unfounded.

In Lecture IV. he sums up his views, and considers diseases of the skin as regards diet, hygiene, and general therapeutics, giving many practical hints. He believes, and we think rightly, that the value of mineral springs is greatly overestimated, and he arrives at the simple conclusion that, apart from the salutary accessories of watering-places, it is the water itself rather than the mineral ingredients it contains which really benefits the patient.

A Hand-book of Medical Jurisprudence and Toxicology, for the use of Students and Practitioners. By W. A. Brend, M.B., B.Sc. Lond., Barrister-at-Law. London: C. Griffin & Co. 1906. Pp. 287.

This little book is intended primarily for the use of medical students, and, in scope, is sufficient for the requirements of the examinations of the various licensing bodies. It is a very difficult matter satisfactorily to compile such a book, it is so hard to decide what to include and what to omit. We must say that it appears to us that Dr. Brend has been succesful in his task. His hand-book is clear and well written; it is very concise, and yet it contains nearly everything of importance. We can warmly recommend it to students as a satisfactory book to make up for examination purposes.

The binding and general make-up of the book are first class. The only criticism which we wish to make is that the type is small, and the price (8s. 6d.) seems rather high for a book of this size.

The Physiology and Therapeutics of the Harrogate Waters, Baths, and Climate, applied to the Treatment of Chronic Disease. By W. Bain, M.D.; and W. Edgecombe, M.D. London: Longmans, Green & Co. 1905.

The modes of action of mineral waters and of spa treatment in general are undoubtedly obscure, and we, therefore, all the more gladly welcome a work such as that under review.

In it the authors honestly try to place the subject on a more secure foundation, and they have industriously collected valuable data, which are fortified by their own experimental researches and wide clinical experience.

For the average medical practitioner the fourth and concluding section of the book is the most important; 1,500 cases of chronic disease are analysed, and their treatment by Harrogate methods is discussed.

We can warmly recommend the book as a straightforward and scientific effort to present, upon rational lines, the basis of spa treatment, and it is by far the best therapeutic guide we have met with to any watering-place at home or abroad.

A few years ago, at a cost of £120,000, a new and magnificent suite of baths was erected at Harrogate, which for comfort and completeness of detail are perhaps unrivalled in Europe.

Manual of Medicine. By T. K. MONRO, M.D.; Professor of Medicine in St. Mary's College. Second Edition. University Series. London: Baillière, Tindall & Cox. 1906.

THE fact of this volume having already reached a second edition shows that it must have been fairly widely accepted as a standard text-book in Great Britain, but, as far as we are aware, it has not as yet been extensively employed by medical students in this country. It has plenty of time, however, to win favour, and although its competitors are many, we have no doubt that before the present edition has run its course it will be more generally known.

It is, indeed, produced in a most attractive style both as regards the subject-matter dealt with and the general get up of the book, and is, above all, written, from the student's point of view, by one who is apparently well accustomed to students' wants. Of the actual text it is unnecessary to say much, as, with the exception of the manner of exposition, one does not expect to find anything original in a work of the kind, but we may say that the work is well up to date in all its parts, and that although some of the chapters are rather short, every subject is dealt with in a practical manner. One point in the book is specially worthy of commendation, and that is the introduction of a short description of the methods of physical examination as applied to the diagnosis of chest complaints. From our own point of view we would have preferred to see the chapter on skin diseases omitted, but, on the other hand, we know that many students complain now-a-days of the necessity of mastering a special work on that subject, and of the difficulty of obtaining one which will be sufficiently small to be conveniently perused and remembered.

The only fault that we have to find is that the book is a little too didactic, and not sufficiently stimulating—in fact, that it fails to impress the fact that Medicine is at best an unfinished, though progressive, science. One of the many functions of a text-book is to encourage in the reader original research and a desire for more knowledge. The volume before us appears to ignore this fact, but we believe that the average student will look upon that as a point in its favour.

Nursing in the Acute Infectious Fevers. By GEORGE P. PAUL, M.D. Philadelphia and London: W. B. Saunders & Co. 1906. Illustrated. Pp. 200.

ALTHOUGH the author in the preface says "the subject-matter is written for the nurse and not for the medical graduate or scientific worker," the majority of readers in this country will value it rather as a handbook showing the medical man how he ought to have his patients nursed than as a manual to be placed in the hand of the nurse. Lists of possible complications, with very short technical explanations, fit to alarm, but not to inform, are given. "Hyperdermoclysis of normal saline solution" is recommended in severe cases of scarlatinal dropsy, but no explanation of the term is given. If long words must be used a glossary should be added. To recommend "red curtains on the windows . . . and even red wall papers and hangings" in small-pox is hardly reasonable, and certainly not a doctrine of perfection. It is not this that is meant by the Red Light Treatment of Small-pox. Several expressions, such as "gravity cream," although easily understood, strike the eye as unfamiliar, and some of the methods, such as the "bed bath," would inflict more disturbance on the patient than the possible benefits would counterbalance. On the whole, however, the book is practical and suggestive.

Lectures upon the Nursing of Infectious Diseases. By F. J. WOOLLACOTT, M.D. London: The Scientific Press, Limited. N. D. Pp. 147.

THIS is an excellent, accurate, and reliable handbook for nurses who have to deal with infectious cases. The symptoms of the diseases are described and their occurrence is explained. Those symptoms which specially need observation and report, as possible forewarnings of dangers and complications, are emphasised. The paragraphs on treatment are clear and practical, and are judiciously limited to what nurses have to carry out, and for which they may have to make preparation.

The Diseases of the Nose and its Accessory Sinuses. By H. LAMBERT LACK, M.D. (Lond.), F.R.C.S., &c. London, New York, and Bombay: Longmans, Green & Co. 1906.

MR. LACK adds to our list of books on the nose, and has certainly produced a work in every way worthy of his reputation. He goes into the anatomy with sufficient fulness for the purpose in view, and one must at once mention possibly the most useful feature of his book, that, at the end of each chapter or paragraph he refers the reader to other books, monographs, &c., where the subject is also dealt with. This enables the reader, when looking up a subject, to at once gain some knowledge of the literature, and to know where to find further discussion, should that be necessary.

His chapter on nasal obstruction and the diagrams of the highly-arched palate are specially worthy of commendation; and if we were to single out one more useful than another, perhaps Figure 47, page 65, would illustrate best how deviation of the septum may be caused.

His chapter on headache and pain in connection with the diseases of the nose and accessory cavities is useful, and his diagram of the pain areas connected with pain in accessary sinuses, &c., is very true and helpful.

In discussing asthma, hay-fever, &c., he is in favour of nasal treatment, whether there be obvious nasal trouble or not; for, as he says, many cases are benefited, though it might be hard to say why, unless one is content with the theory first brought out by Dr. Alexander Francis, that cauterising the septum in asthma reduces the irritability of the respiratory outpost or sensory sentinel in the nose.

One must join issue with his half-hearted praise of the operation of sub-mucous resection of the septum, as most operators now prefer it, in spite of its difficulty, to any other operation.

His discussion of operations for the antrum of Highmore are very full, and his own method of operating through the inferior meatus, without first opening the canine fossa, is worthy of wider use. The one disadvantage which may be urged against it is that it is necessary to remove a good piece of the inferior turbinal. At the same time most patients would prefer this to the very much more serious operation first proposed by Mr. Caldwell.

The author has succeeded, within the limits of a medium sized book, to give the reader a lot of information, and has not cumbered his pages with obsolete operations and long-since exploded theories.

The Paris Medical Journal. A Monthly Review of French Medicine. Edited by A. A. Warden, M.D., Physician to the Hertford British Hospital; and Edmund L. Gros, (M.D., San Francisco and Paris). Vol. I. No. 1, April, 1906. No. 2, May, 1906.

The appearance of this new medical periodical bears testimony to the increasing cosmopolitanism of medical knowledge and international communication. That a professional publication, printed in the English language for the special use and edification of English readers, should be issued monthly from the press of Gallic *Lutetiæ* is as significant of the prevailing direction of the currents of thought in the present generation as any of the historic demonstrations carried out in connection with the much-advertised *entente cordiale.* It marks as wide a departure from the practices and prejudices of the days of England's Henry V. and France's Jeanne d'Arc. We cordially wish this novel journalistic venture all the success which we believe it to deserve. We look upon its appearance as a movement in the direction of increasing the existing proportion of general peace and good-will among men, and also of judicious culture—with mutual aid of the most enlightened nationalities—of the particular domains of intellectual acquisition and critical discrimination which must yield the best materials for the enrichment of the Medicine of the future.

The first number of our Anglo-French contemporary is of folio form, and contains 32 pages of text. The general appearance is modest, while the matter is extremely well selected, and the printing clear and correctly carried out—a rather difficult item in the task of issuing a periodical in a foreign metropolis. The second number, which has just come to hand, contains such impressive headings as "Syndromes of Cholelithiasis and Appendicitis" (Dr. Le Gendre), and "Alcoholic Polyneuritic Psychosis" (Prof. Raymond), &c., &c. And the interest which every true lover of his profession feels in the personalities and achievements of the great living and the great departed votaries of the healing art is agreeably and instructively nourished by an article on Professor G. Dieulafoy. It is headed by an engraving of the great physician—in what we would have thought extremely clerical-looking dress and (standing—speaking) posture—and presents in the text an excellent profile view of the head of his inspired master, Trousseau, as it rested on the pillow of death. The latter has a double interest from the fact that it has been prepared from a pen-drawing made by Professor Dieulafoy of his great master, as the latter lay on his death-bed. The origin of the special notice of the pupil by the honoured teacher is told with singularly good effect. Trousseau was calling the attention of the students in the women's ward to the characteristic hankering of hysterical females for the observation of all around. He referred to Ovid's description of the rape of the Sabines, and wished to quote the line, but his memory proved treacherous at the moment. Turning to the students, he asked could any one supply him with the verse. After a momentary hesitation, Dieulafoy moved forward and enunciated the metric syllables:

> "Spectatum veniunt, veniunt spectentur ut ipsæ."

The teacher was delighted. The name of the pupil was asked. The latter had made the first great forward step in a brilliant professional career. We earnestly pray that our own representative student classes may always be able to present such answers—even while our hope languishes in its promises.

Rational Organotherapy with Reference to Urosemiology. By PROFESSOR POEHL, PROFESSOR PRINCE VON TARCHANOFF, DR. A. F. POEHL, and DR. WACHS. Translated from the Russian Text. Volume I. London: J. & A. Churchill. 1906.

THE above rather high-sounding title is given to the first of a series of contemplated works on the value of organotherapy as determined by its general effects on body metabolism—these effects being largely determined by quantitative as well as qualitative analysis of the urine, and especially by the determination of the amount of oxidation going on within the body as shown by the ratio existing between the different forms in which nitrogen is excreted. The work, as indicated above, is translated from the Russian text, and after perusal of it we are forced to the conclusion that either the original work was written in a very unattractive style or else that it has lost considerably in the process of translation. The volume contains 218 pages, and is practically entirely devoted to a study of the value of spermin in therapeutics. After a brief historical introduction there follows a lengthy chapter on the objects of a rational organotherapy, in which the authors discuss with the power of masters of the subject the various methods that have from time to time been advocated with a view to ascertaining the activity of the metabolic processes of the human body. Unfortunately, the amount of knowledge displayed is far beyond the clearness of exposition, and without the closest attention it is difficult from time to time to understand what the writers are aiming at. The general conclusion arrived at is that a much more thorough examination of the urine than is at present generally carried out is desirable, and should include not only various nitrogen estimations, but also the determination of the absolute osmotic tension. That many readers will follow either the advice or the argument on which it is based is, we think, open to doubt. The chapter closes with a remark that is sufficiently original to be quoted in full—"Hitherto the autopsy has been the only certain guide to diagnosis, but it is unfortunately applicable only after death"! Some interesting points are, however, brought out with reference to katalysators, and the practical fact is insisted on that great care should be exercised in obtaining our animal products absolutely pure. Next follows a chapter on the chemistry of spermin and on the various preparations of it that may be employed. It is pointed out that the substance is a product of both male and female organs, and that it is largely distributed in the body, being produced by leucolysis as well as by many other means. The physiological effects that are claimed as following its use are numerous, and include the following:—(1) The proportion of urea nitrogen to the total nitrogen in the urine rises. (2) The amount of intermediary nitrogenous products diminishes. (3) The amount of uric acid excreted in proportion to the amount of phosphoric acid rises. These statements and others are supported by clinical and experimental evidence, but we cannot say that the writers have convinced us of their importance or of the fixity of their results. More interesting are some experiments that seem to show that animals treated with spermin are more immune to pathogenic micro-organisms than are normal untreated animals, but these again require careful consideration before they are accepted as conclusive. The book is concluded by a long chapter detailing the clinical results that have been found to follow the administration of spermin in various diseases, over twenty in number, and including such conditions as chlorosis, tabes dorsalis, syphilis, and cholera. On the whole, we are favourably impressed with its value, and certainly think that it is worthy of trial in cases that are either otherwise incurable or else resist the usual methods of treatment. The whole volume shows us how advanced the Russian School of Medicine must be, and from that point of view is interesting. We cannot recommend it to the general practitioner, but we feel sure that the skilled physiological chemist will find much to interest him and much to criticise in its pages.

Biographic Clinics. Vol. III. Essays concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients. By George M. Gould, M.D. London: Rebman, Ltd. 1906. Pp. 516.

Volume III. consists of thirteen chapters, an introduction, and two appendices, as follows:—The New Ophthalmology and its Relation to General Medicine, Biology, and Sociology; The Life Tragedy of John Addington Symonds; Taine's Ill-Health; Eye Strain as a Cause of Headache and other Neuroses, by Simson Snell, F.R.C.S. Ed.; Slight Errors of Refraction, and their Influence on the Nervous System, by C. Ernest Pronger, F.R.C.S.; The History and Etiology of Migraine; The Optic and Ocular Factors in the Etiology of the Scoliosis of School Children; Visual Function the Cause of Slanted Handwriting: its Relation to School Hygiene, School Desks, Malposture, Spinal Curvature, and Myopia; Dextrality and Sinistrality; The Pathologic Results of Dextrocularity and Sinistrality; Subnormal Accommodation and Premature Presbyopia; The Reception of Medical Discoveries; Some Problems of Presbyopia; A Suggestion as to Postmydriatic Refraction Tests; A Case of "Mathematically Perfect Eyes."

Those who have seen Volumes I. and II. of Dr. Gould's

"Biographic Clinics" will be able, from the above, to form a good idea of the style and scope of the present one. Dr. Gould is not complimentary to the Ophthalmological world outside America, and even in the New World there be few that see the light of "the New Ophthalmology." In his introduction (page 9) he writes:—"The Continent of Europe still lingers in pitiful barbarism upon this subject. When my patients return from these benighted countries they tell tales that should be gathered for the amusement of coming and humor-loving generations."

He thinks that "some day it will be established that eye strain is a large factor in the production of diseases of the kidney." (Page 48.)

Further on (p. 329) he says:—"In Germany, the Motherland of Myopia, there is no scientific correction of ametropia. The very simplest and most fundamental conditions of accuracy are wilfully or ignorantly unnoticed, and the ocular, nervous, and nutritional systems are hopelessly ruined and by wholesale. With one splendid exception our American students of the subject have usually adopted the European blunder, and for a hundred years we shall doubtless have the empty echoings of the European nonsense as to school desks and myopia."

Dr. Gould reminds us of the young cabinet minister spoken of by Mr. Chamberlain as the personification of "charity," that charity which vaunteth not itself and is not puffed up.

But in spite of a great deal of vain-glorious boasting as regards his "discovery"—viz., that most diseases of the human body and mind are produced by "eye strain," and much vilification of those who do not accept the gospel as preached by him—there is plenty of interest in the book, and it will cause its reader to think that underneath the superstructure of froth there may be a solid foundation of valuable suggestiveness.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By Henry T. Bewley, M.D. Univ. Dubl.; F.R.C.P.I.; Physician to the Adelaide Hospital; and Lecturer on Forensic Medicine and Hygiene, Trinity College, Dublin.

I. THE TREATMENT OF DIABETES.
II. CHRONIC BRONCHITIS AND OBESITY.
III. SALICYLIC IONISATION IN TIC DOULOUREUX.
IV. CALCIUM CHLORIDE AS A MEANS OF PREVENTING ERUPTIONS FROM ANTITOXIN.
V. THE HEART IN STOKES-ADAMS' DISEASE.
VI. APPENDICITIS IN CHILDREN.
VII. THE GUAIACUM TEST FOR BLOOD.
VIII. THE PROPHYLAXIS OF GASTRIC HÆMORRHAGE.
IX. CORYZA IN INFANTS.
X. SAHLI'S METHOD OF TESTING THE STOMACH CONTENTS WITHOUT USING THE STOMACH TUBE.

I. THE TREATMENT OF DIABETES.

R. T. **Williamson** calls attention to the value of aspirin in the milder forms of diabetes; when combined with a slight restriction of diet, or even without any restriction, it has a distinct action in reducing the sugar excretion. He gives 15 grains three or four times a day.

It is important that alkaline water or milk should not be taken immediately after the aspirin. One drop of lemon juice should be taken with each dose.

He also calls attention to the value of desiccated cocoa-nut powder as a substitute for flour—it is comparatively cheap, and is therefore suitable for poor patients; it also contains much fat, which is valuable. Its percentage composition is:—Fat, 71.13 per cent.; nitrogenous substances, 9.43 per cent.; carbohydrates, 12.44 per cent. Most of the carbohydrates consists of sugar, but this can be removed by the action of yeast. Hence sugar-free cocoa-nut cakes may be prepared as follows:—

Cocoa-nut Cakes.—1 oz. of German yeast, 4 tablespoonfuls of lukewarm water, 16 oz. of desiccated cocoa-nut powder; mix into a paste, adding a little more water if necessary; leave in a warm place for 20 minutes, then add 2 eggs beaten up in 3 or 4 tablespoonfuls of milk, and a little salt; mix well; place into 16 small tins or dishes (well greased). Bake in a moderate oven 20 or 30 minutes.

Cocoa-nut Pudding can be prepared thus:—½ oz. of German yeast is well mixed in lukewarm water with ¼ lb. of cocoa-nut powder, then ½ oz. of butter, a pinch of salt, and a little milk are added; all must be well mixed. The mixture is placed in a pudding-dish and baked in a moderate oven for 20 to 30 minutes, until the surface is brown. The pudding can be eaten hot or cold, and may be taken with custard, and sweetened, if desired, with saxin.

He also shows that some fruits contain but little sugar. Oranges contain only 2.5 to 3 per cent. of sugar, and "grape-fruit" contains less, and is a valuable adjunct to the diet of diabetics. The following fruits may also be allowed, as they contain only a small percentage of sugar (chiefly levulose) and non-nitrogenous extract (total percentage of both being given in brackets):—

Cranberries (1.5), unripe green gooseberries (2–2.5), raspberries (4–5), bilberries (4–5), blackberries (4), red currants (6–7). Melons also contain but little sugar, and may be allowed in limited quantity. Rhubarb is almost free from sugar (0.33 per cent.).—*Medical Chronicle*, May, 1906.

II. CHRONIC BRONCHITIS AND OBESITY.

G. A. Sutherland calls attention to the serious effect which obesity exerts on the progress of chronic bronchitis.

We find clinically that a very common history in a bronchitic patient is as follows:—Some time after passing the age of forty, he or she began to get stout. With the increasing stoutness it was noticed that an ordinary cold, which formerly did not pass beyond the naso-pharynx, had a tendency to affect the bronchial tubes. There was also an increasing frequency about these colds. Later, the ascent of a slight incline produced a shortness of breath, to which the patient had been previously unaccustomed. Then, even on a level road, the rate of walking gradually became slower and slower, and, as the result, the amount of daily exercise became considerably diminished. There was also noticed a slight or marked wheeze about the chest, along with a shortness of breath on any exertion, even talking; and at night a desire to have the chest propped up to secure easy and quiet breathing. Perhaps no more acute symptoms had developed, or, it may be, that a run to catch a train had produced an attack of acute and alarming dyspnœa. On examining a patient with such a history, we shall often find the signs of chronic bronchitis. The heart is difficult to define from the mass of fat in the chest wall, but there are no evidences of cardiac degeneration or of valvular disease. The pulse is regular and good when the patient is at rest, and the arteries and kidneys appear to be healthy.

If one wishes to make a cure, the first and essential thing is to remove the excess of adipose tissue. Too much carbohydrates and fats are being taken. The lines of treatment which will be found simple, safe, and efficient are (1) a lean meat diet; (2) a saline aperient in the morning; (3) water to drink freely between meals.

First, as regards the diet, there should be three meals a day, selected from the following:—Beef or mutton, chops, steak, fowl, fish, game, kidneys, tongue, and veal. These are to form the main part of the dietary, but the patient must partake of them in moderation, so as to avoid the evils of an excess of proteid food in the system. If signs of indigestion appear, he has probably been partaking too freely. In addition, he may be allowed at each meal two small pieces of dry toast, or two breakfast biscuits, or two tablespoonfuls of dinner biscuits; at one meal a tablespoonful of spinach or other green vegetable, and at another a raw apple. One cup of tea or coffee, or one claretglassful of water, with half an ounce of whisky, if required, represents the amount of fluid allowed with meals.

Secondly, a dose of some saline should be taken every morning in as concentrated form as possible. One good evacuation daily is sufficient.

Thirdly, while the amount of fluids taken at meals is strictly limited, the patient is encouraged to drink at other times from one to two pints daily. Plain water is as good as anything else, but mineral waters may be taken if preferred.

The result should be a loss in weight of from two to five pounds a week. The patient will complain that his hunger is not satisfied—this cannot be helped. In a short time he will report the disappearance of the chronic wheeze and of the shortness of breath on exertion. He may become uneasy about the effect of this diet on his gout. "So far I have not seen any ill-effect in the goutiest of patients. I have found that 'gouty bronchitis' in a fat subject generally turns out to be fatty bronchitis in a gouty subject."

The severe proteid regimen need not be persisted in for the rest of the patient's life; what we must insist on is that his meals should be moderate in amount, and that carbohydrates should not be in excess.

So also in babies who are subject to bronchitis, it will often be found that they are fat and flabby, and when they are given less carbohydrates the bronchitic tendency will soon pass off.—*Ed. Med. Jour.*, April, 1906.

III. SALICYLIC IONISATION IN AN OBSTINATE CASE OF TIC DOULOUREUX.

Professor S. Leduc, of Nantes (*La Semaine médicale*, November 22nd), reported last year several cases in which he had obtained excellent results in neuralgia by electrolytic introduction of salicylic ions (galvanic cataphoresis). Recently he has again resorted to this method with success in a case of tic douloureux of thirty-five years standing. It affected all of the right side of the face, and the pain was constant. Frequent crises occurred, which were so severe that the patient lost flesh and his face constantly bore the appearance of acute suffering. He was cured, according to Dr. Leduc, in three séances by salicylic ionisation. The method followed was to apply the cathode, moistened with a solution of salicylate of sodium, to the right side of the face, and at the first treatment the current was raised gradually to an intensity of

45 milliampères and maintained for forty minutes. After the second séance, which took place three days later (when the current was allowed to pass for one hour, with a current of 35 milliampères), he experienced decided amelioration. The pain now returned only during exposure to cold. Finally, a third and last ionisation of forty minutes brought about a final cessation of the pain. From that time the patient's condition has been remarkably improved, and he has also even regained considerable flesh.—*N. Y. Med. Jour.*, Dec. 30, 1905.

IV. CALCIUM CHLORIDE AS A MEANS OF PREVENTING ERUPTIONS FROM ANTITOXIN.

M. Netter, in a communication read before the Société de Biologie (*La Tribune médicale*, February 7, 1906), stated that the administration of one gramme of calcium chloride on the same day as that on which the injection of antidiphtheritic serum is made, and on the two succeeding days, will prevent, in great measure, at least, the skin eruption, which sometimes follows such injection. His statistics were based on a total of 516 infants, half of which number received the injection alone, and the others also received the calcium chloride. Among the latter the proportion of those presenting an eruption was only six per cent., whereas among the controls the proportion was forty per cent.—*N. Y. Med. Jour.*, March 24, 1906.

V. ACTION OF THE HEART IN STOKES-ADAMS' DISEASE.

Leuchtweis describes an interesting case of this condition :—A workman aged forty, addicted to beer and tobacco, had had occasional attacks of unconsciousness for seven years. He stated that during that time his pulse frequently had never exceeded 30 per minute. On examination it was found that there were visible pulsations in the jugular veins, irregular, alternately strong and weak, best seen while lying. These pulsations occurred 48–50 times a minute. The ventricle, as shown by the apex beat and the carotid pulsation, was always beating 30 to the minute. Tracings showed that auricle and ventricle beat independently. There was thus a complete "heart block."—*Deut. Archiv. f. klin. Med.* 86, 4 and 5.

VI. APPENDICITIS IN CHILDREN.

Dowd concludes that in children (1) the rapidity and insidiousness of the disease are much greater; (2) that the percentage of diffuse and general peritonitis is greater, probably because the omentum is less apt to inclose the inflamed appendix; (3) that the pain is almost always present, but is more difficult to interpret; (4) that the vomiting is almost always present and is frequently many times repeated; (5) that the abdominal palpation in the majority of cases is as satisfactory or more satisfactory than in adults, but in a few cases is absolutely misleading; (6) that constipation is much less likely to be present; (7) that they have a greater ability to deal with general peritonitis than adults have; (8) that during the acute progress of the disease delay is more dangerous than in adults, because of the insidious course of the disease and the greater tendency to peritonitis, and immediate operation is to be advised.—*Med. News*, and *N. Y. Med. Jour.*, Sept. 30, 1905.

VII. THE GUAIACUM TEST FOR BLOOD.

I. S. Wile (*New York Medical Journal*, 1905, p. 752).—A better reaction is thought to be obtained by extracting the colouring matter and testing for the hæmoglobin of the blood at one step. To equal parts of turpentine and chloroform add a drop of tincture of guaiacum until slight milkiness appears. Add the suspected solution to 1–2 cc. of the reagent, and shake thoroughly. When blood is present the solution becomes blue. The colour takes a few seconds to manifest itself, but gradually deepens until all the hæmoglobin has entered into the reaction. The colour gradually becomes lighter and slowly disappears. The test reacted with 0.5 cc. of blood in 40,000 cc. of urine, while one in 10,000 dilution of blood failed to react with the usual peroxide-guaiacum test. Instead of using the tincture of guaiacum, a 10 per cent. solution of resin of guaiacum in glacial acetic acid may be substituted.—*Med. Chron.*, Dec., 1905.

VIII. THE PROPHYLAXIS OF GASTRIC HÆMORRHAGE.

I. Boas (*Deutsche med. Woch.*, No. 18, 3rd May, 1906).—The author lays much stress upon the recognition of preliminary hæmorrhage probably of small amount preceding a serious hæmorrhage in ulcer of the stomach. This, he declares, is the necessary point of departure in attaining a prophylactic treatment. In fifteen months he saw in private practice 82 certain and 60 probable cases of ulcer of the stomach. In 58 per cent. of these blood was found in the stools and in 74 per cent. of a large series of cases reported by Siegel. The question arises, Do these slight hæmorrhages lead in the majority of cases to later manifest hæmorrhages? From experience directed to this question for five years, Boas answers unhesitatingly, Yes. These slight hæmorrhages appear only by the dark colour of one or two stools, and are generally described by the patient as such. Such evidence is not sufficient, but should, Boas says, be the indication for a closer watch for the repetition of it that will likely occur. For the recognition of blood, the guiac-turpentine, the aloin, or the spectroscopic test will answer perfectly well. When blood has been recognised, treatment will be directed first to stop the hæmorrhage, and, secondly, where possible, to cure the underlying cause of the hæmorrhage. Rest in bed is at once enjoined, save in cases where gastric or intestinal carcinoma is present; in these, only when the hæmorrhage is severe. Milk diet is strictly enjoined, and in severe cases injections per rectum of 10 to 20 per cent. calcium chloride solution. The author doubts if its effect is by reason of its being a hæmostatic, but considers it useful. In all these cases of hæmorrhage injections are preferable to purgatives to obtain movements of the bowels.—*Montreal Med. Jour.*, July, 1906.

IX. TREATMENT OF CORYZA IN INFANTS.

L. Ballin (*Die Therapie der Gegenwart*, 1905, p. 65).—Coryza in infants is especially serious on account of the nasal obstruction produced and the consequent difficulty in feeding. In addition, bronchitis and broncho-pneumonia are more frequent complications than in adults. Dr. Ballin believes that these complications are due to the inhalation of infective secretion, and he gives figures from his experience showing that the use of adrenalin solution (1 in 1,000) three or four times a day causes a distinct improvement in both respects.

The solution is applied to the nasal mucous membrane by means of cotton wool.—*Med. Chron.*, Sept., 1905.

X. SAHLI'S METHOD OF TESTING GASTRIC CONTENTS WITHOUT PASSAGE OF THE STOMACH TUBE.

A. Kühn (*Münch. med Wochenschr.*, December, 1905, p. 2412.—This method was devised to avoid the discomfort which attends the passage of the stomach tube, as well as to obtain more consistent results than are given by the ordinary test breakfast. This meal; as usually given, though most easily tested, hardly gives the stomach enough work to test its secreting capacity. A method easily applied to a full meal is to be preferred. The reaction depends on the fact that raw connective tissue, such as catgut, is digested only by gastric juice, and only when free hydrochloric acid is present in this gastric juice. A small quantity of methylene blue is tied up in a piece of india-rubber membrane by means of raw catgut thread. This is given immediately after the midday meal. The presence of blue pigment in the urine shows that secretion of acid by the stomach and absorption of material by the intestine are both being carried on; absence of it shows either that food is passing too quickly from the stomach or that there is insufficiency of the secretory or motor function; delay points to slighter degrees of insufficiency. If the urine is alkaline the blue colour becomes apparent only after boiling with weak acetic acid.

The writer tried this reaction with 54 cases, and contrasted it where possible with test breakfast results in the same patients. On the whole the two methods agree; in the few cases where there is a discrepancy the blame is laid on the deficiencies of the ordinary test breakfast, and the writer considers Sahli's method both more simple and more certain. Methylene blue pills with well-made catgut coverings may be obtained from the firm of G. Pohl, Schönbaum, Danzig. Other workers use iodoform in similar capsules. In this case the saliva is tested at intervals for the iodine reaction.—*Med. Chron.*, March, 1906

PART IV.

MEDICAL MISCELLANY.

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PROFESSOR DIEULAFOY, OF PARIS.

In *La Presse Médicale* of Saturday, July 21, 1906, under the heading " Les Professeurs de Clinique de la Faculté de Médecine de Paris," M. Pierre Maurel gives the following character-sketch of the distinguished Physician of l'Hôtel Dieu, that great hospital immortalised by the illustrious Master, A. Trousseau.

" At the Hôtel Dieu, the Trousseau Amphitheatre is almost completely filled long before the commencement of the clinical lecture by Professor Dieulafoy, which takes place each Saturday.

" As audience : very many medical students (the course takes place late in the Session, which allows them to attend at the close of the other clinical courses), strangers, foreigners, metropolitan physicians, medical attendants at watering-places, and so on. In short, an audience numerous and varied. There also are to be seen in the lecture theatre honorary hospital physicians, men of letters, society ladies altogether unconnected with medicine.

" At half past ten o'clock, amidst applause, like a gust of wind, enters the Professor. With his hand he wafts a gracious salutation to the friends whom he recognises among the audience. He is followed by a numerous staff, who noisily seat themselves. Meanwhile, the lecture-theatre continues to fill, and is soon packed.

" The Professor, always the same save that his moustache grows grey, coatless, in a fancy waistcoat, wearing the apron which has been the hospital costume for five and twenty years, erect, motionless, turns his head right and left in quick jerks, looks at the array of listeners, and surrounded by his pupils drawn up round the table with its green cover, poses his tall and elegant form under the bust of Trousseau. He pauses while the noise subsides, and once silence is established, begins.

" In a voice which carries well to all parts of the theatre, he speaks, with animation, ease, warmth, and enthusiasm. He knows how to phrase his sentences, by showing off a pleasing literary style, and giving an attractive form to points even the most thankless. He presents his subject with an art which bewitches. Appropriately, he upholds his reputation for elegance and clearness of style.

"Very attractive, he compels and retains attention by his voice, his accent, his gesture. He moves to and fro with vehemence, folds his arms across his chest, shrugs his shoulders, advances, stops, with his hands behind his back, retreats a couple of steps, or, with out-stretched arm, advances in the attitude of an orator. He acts during his lecture after a wonderful fashion, and displays every attractive art to assert and maintain the great success of his clinique.

"But all at once he stops, and addressing the audience, he cries—'Gentlemen, make room for the arrivals who throng the staircase. I see a seat there. Sit close, gentlemen. Still another seat down there.' And satisfied that every one can see and hear, he resumes his lecture.

"If he is dealing with the clinical aspect, he acts the scene of the examination of the patient, of the consultation between the medical advisers, of the questioning by the family, in a series of picturesque and humorous tableaux, always keeping up the serious tone which is fitting to the circumstances. He knows exactly how to wing the word or imitate the scene which will provoke laughter and command attention.

"If he reads the notes of a case, he does so sometimes in a voice, thrilling, sonorous, distinct; sometimes in a subdued whisper or with hasty utterance, always in varying shades of diction. He throws into relief and repeats the sentence in a way that impresses the memory. And so throughout the lecture he holds his audience entranced.

"At length as the hour advances, when he sees that he cannot finish his subject, he emphasises the importance and interest of that which he purposely reserves, not having time to explain it sufficiently. 'The rest in the next lecture,' says he. In this way he knows how to arouse the interest of his audience and to attract them to the next clinical lecture.

"And so the discourse ends amidst a tempest of applause, setting the seal to the success of the Master who upholds with *éclat* the tradition of the brilliant clinique of other days.

"On leaving, the Professor with his quick stride, passes in front of the students in line. He is followed by his numerous staff, who attend him to the invariable 'two-horse-chaise.' The circle forms round the carriage. The Master affably shakes hand with everyone, takes his seat, and drives off, while the circle bows and uncovers."

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, July 14, 1906.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending July 14, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 16.9 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,101,499. The deaths registered in each of the four weeks ended Saturday, July 14, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	June 23	June 30	July 7	July 14			June 23	June 30	July 7	July 14	
22 Town Districts	18.3	15.3	15.0	16.9	16.4	Lisburn -	27.3	9.1	4.5	13.6	13.6
Armagh -	13.7	27.5	13.7	13.7	17.1	Londonderry	18.6	19.8	8.7	17.4	16.1
Ballymena	28.7	9.6	19.2	9.6	16.8	Lurgan -	8.9	8.9	17.7	35.4	17.7
Belfast -	18.7	16.1	15.0	16.9	16.7	Newry -	8.4	16.8	4.2	—	7.4
Clonmel -	25.6	5.1	—	20.5	12.8	Newtownards	28.6	—	45.8	34.3	27.2
Cork -	14.4	18.5	13.7	15.8	15.6	Portadown	15.5	10.3	10.3	15.5	12.9
Drogheda -	16.3	4.1	16.3	12.3	12.3	Queenstown	26.4	19.8	13.2	13.2	18.1
Dublin - (Reg. Area)	20.2	16.4	16.9	18.7	18.0	Sligo -	19.2	4.8	14.4	19.2	14.4
Dundalk -	4.0	8.0	4.0	8.0	6.0	Tralee -	31.7	10.6	21.1	15.9	19.8
Galway -	23.3	7.8	19.4	—	12.6	Waterford	7.8	11.7	11.7	7.8	9.8
Kilkenny -	9.8	14.7	4.9	9.8	9.8	Wexford -	9.3	18.7	32.7	23.3	21.0
Limerick -	10.9	10.9	9.6	17.8	12.3						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, July 14, 1906, were equal to an annual rate of 1.8 per 1,000, the rates varying from 0.0 in thirteen of the districts to 5.3 in Tralee—the 3 deaths from all causes in that district including one from diarrhœa. Among the 119 deaths from all causes in Belfast are 9 from whooping-cough, one from enteric fever and 6 from diarrhœal diseases. The 23 deaths from all causes in Cork include one from enteric fever and one from diarrhœa. Among the 14 deaths in Londonderry are 3 from measles and one from diarrhœa. The 4 deaths in Waterford include one from pyrexia (origin uncertain). Included in the 8 deaths from all causes in Lurgan is one from whooping-cough; and among the 4 deaths in Clonmel is one from enteric fever.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, July 14, 1906, amounted to 230—110 boys and 120 girls; and the deaths to 140—66 males and 74 females.

DEATHS.

The deaths registered during the week ended Saturday, July 14, represent an annual rate of mortality of 19.3 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the area, the rate was 18.7 per 1,000. During the twenty-eight weeks ended with Saturday, July 14, the death-rate averaged 22.8, and was 3.5 below the mean rate for the corresponding portion of the ten years 1896-1905.

The registered deaths (140) included one from measles, one from typhus, 6 from whooping-cough, one from enteric fever, and 3 deaths from *diarrhœa*. In each of the 3 preceding weeks deaths from measles were 0, 0, and 0; deaths from typhus were 0, 0, and 0; deaths from whooping-cough were 2, one, and 4; deaths from enteric fever were 0, 2, and 0; and deaths from diarrhœal diseases were 0, 2, and 0. One death was directly attributed to influenza. The mean of the daily readings of the earth thermometer at a depth of 4 feet, for the week, was 56.2°.

The deaths from pneumonia included one death from lobar pneumonia, 2 deaths from broncho-pneumonia, and 6 deaths from *pneumonia* (not defined).

The deaths from all forms of tuberculous disease, which, in each of the 3 weeks preceding, were 40, 30, and 37, declined in the period under notice to 28. This figure comprises 8 deaths from tubercular phthisis, 13 deaths from *phthisis*, one death from tubercular meningitis, one death from tubercular peritonitis, and 5 deaths from other forms of the disease.

There were 2 deaths from carcinoma, and 2 deaths from cancer (undefined).

The deaths of 4 infants, prematurely born, were registered.

There were 12 deaths from diseases of the brain and nervous system. Included in this figure were 3 deaths of infants under one year of age and one child aged 3 years from *convulsions*.

Diseases of the heart and blood-vessels accounted for 26 deaths.

The 10 deaths from diseases of the respiratory system included the deaths of 9 persons from bronchitis.

One death by accident and one death by suicide were registered.

In 2 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the death of a person aged 91 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following Table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and the Executive Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended July 14, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	June 23	-	*	*	4	-	-	2	-	6	8	26	-	*	*	*	46
	June 30	-	*	*	4	2	-	4	-	-	3	12	-	*	*	*	25
	July 7	-	*	*	4	1	-	3	-	4	5	11	-	*	*	*	28
	July 14	-	*	*	6	2	-	1	-	2	5	13	-	*	*	*	29
Rathmines and Rathgar Urban District	June 23	-	*	*	-	-	-	3	-	-	1	-	-	*	*	*	4
	June 30	-	*	*	4	-	-	-	-	-	-	1	-	*	*	*	5
	July 7	-	*	*	2	-	-	1	-	-	-	-	-	*	*	*	3
	July 14	-	*	*	1	-	-	-	-	1	-	1	-	*	*	*	3
Pembroke Urban District	June 23	-	-	-	1	-	-	-	-	-	1	-	-	*	-	-	2
	June 30	-	-	-	-	-	-	1	-	-	1	-	-	*	1	-	3
	July 7	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-
	July 14	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-
Blackrock Urban District	June 23	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
	June 30	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
	July 7	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	July 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	June 23	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	June 30	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
	July 7	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	July 14	-	*	*	-	-	-	-	-	-	-	1	-	*	*	*	1
City of Belfast	June 23	-	*	*	10	-	-	2	-	7	2	4	-	*	*	*	25
	June 30	-	*	*	7	-	-	5	1	3	4	6	-	*	*	*	26
	July 7	-	*	*	18	-	-	1	-	6	7	5	1	*	*	*	38
	July 14	-	*	*	10	-	-	2	-	7	1	2	-	*	*	*	22

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended July 14, 1906, 8 cases of measles were admitted to hospital, 2 were discharged, and 13 cases remained under treatment at the close of the week.

Ten cases of scarlet fever were admitted to hospital, 8 were discharged, and 35 cases remained under treatment at the close of the week. This number is exclusive of 16 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus was admitted to hospital, one died, and 3 cases remained under treatment at the close of the week.

Seven cases of diphtheria were admitted to hospital, and 22 patients remained under treatment at the close of the week.

Seven enteric fever convalescents were discharged, and 17 cases of this disease remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 8 cases of pneumonia were admitted to hospital, 10 were discharged, and 24 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended July 14, 1906, in 76 large English towns, including London (in which the rate was 11.8), was equal to an average annual death-rate of 11.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.3 per 1,000, the rate for Glasgow being 15.5, and for Edinburgh 13.2.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended July 14. From this return it appears that of a total of 29 cases notified 13 were scarlet fever, 7 diphtheria, 3 erysipelas, and 6 typhoid fever. Among the 304 cases of infectious diseases in hospital at the close of the week were 96 cases of scarlet fever, 38 of diphtheria, 99 of measles, 9 of erysipelas, 13 of whooping-cough, and 16 of enteric fever.

VITAL STATISTICS

For four weeks ending Saturday, August 11, 1906.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending August 11, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.0 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,101,499. The deaths registered in each of the four weeks ended Saturday, August 11, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	July 21	July 28	Aug. 4	Aug. 11			July 21	July 28	Aug. 4	Aug. 11	
22 Town Districts	18.0	17.3	17.1	17.0	17.4	Lisburn -	9.1	4.5	22.7	9.1	11 4
Armagh -	20.6	13.7	20.6	27.5	20.6	Londonderry	26.0	13.6	21.1	19.8	20.1
Ballymena	14.4	23.9	19.2	23.9	20.3	Lurgan -	8.9	26.6	17.7	22.1	18.8
Belfast -	17.2	18.1	17.2	18.1	17.6	Newry -	12.6	8.4	12.6	4.2	9.5
Clonmel -	5.1	5.1	15.4	15.4	10.3	Newtown-ards	40.1	28.6	22.9	5.7	24.3
Cork -	15.8	10.3	19.2	16.4	15.4	Portadown -	20.7	20.7	20.7	5.2	16.8
Drogheda -	16.3	8.2	8.2	16.3	12.3	Queenstown	6.6	6.6	6.6	19.8	9.9
Dublin - (Reg. Area)	20.9	20.1	16.8	17.3	18.8	Sligo -	19.2	33.6	24.0	9.6	21.6
Dundalk -	8.0	4.0	19.9	16.0	12.0	Tralee -	15.9	10.6	–	15.9	10.6
Galway -	11.7	3.9	38.8	31.1	21.4	Waterford -	29.2	13.6	19.5	7.8	17.5
Kilkenny -	9.8	–	14.7	–	6.1	Wexford -	4.7	28.0	9.3	14.0	14.0
Limerick -	5.5	17.8	8.2	19.1	12.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, August 11, 1906, were equal to an annual rate of 2.2 per 1,000, the rates varying from 0.0 in thirteen of the districts to 9.6 in Ballymena—the 5 deaths from all causes in that district including 2 from whooping-cough. Among the 127 deaths from all causes in Belfast are 2 from whooping-cough, one from diphtheria, 2 from enteric fever, and 12 from diarrhœal diseases. The 24 deaths in Cork include one from whooping-cough and one from diarrhœa. Included in the 16 deaths in Londonderry is one death from measles. Among the 4 deaths in Drogheda is one from enteric fever. The 5 deaths in Lurgan include one from whooping-cough and one from diphtheria; and amongst the 3 deaths in Wexford are 2 from diarrhœal diseases.

In the Dublin Registration Area the births registered during the week ended Saturday, August 11, 1906, amounted to 186—95 boys and 91 girls; and the deaths to 130—73 males and 57 females.

DEATHS.

The deaths registered during the week ended Saturday, August 11, represent an annual rate of mortality of 17.9 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the area, the rate was 17.3 per 1,000. During the thirty-two weeks ended with Saturday, August 11, the death-rate averaged 22.4, and was 3.4 below the mean rate for the corresponding portion of the ten years 1896–1905.

The registered deaths (130) included 2 from measles, 3 from whooping-cough, 2 from diphtheria, one from enteric fever, and 10 deaths from diarrhœal diseases, not including the deaths of 5 infants under one year of age from *gastro-enteritis*. In each of the 3 preceding weeks, deaths from measles were 2, 2, and 0; deaths from whooping-cough were 3, 2, and 2; deaths from diphtheria were one, 0, and 0; deaths from enteric fever were one, 0, and one; and deaths from diarrhœal diseases were 3, 10, and 11. The mean of the daily earth temperatures at a depth of 4 feet was 58.1°. One death was directly attributed to influenza.

One death from lobar pneumonia, and 4 deaths from *pneumonia* (not defined), were registered.

Tuberculous disease caused 25 deaths, comprising 11 deaths from tubercular phthisis, 7 deaths returned as *phthisis*, and 7 deaths from other forms of the disease. In each of the 3 preceding weeks, deaths from all forms of tuberculous disease were 34, 32, and 25.

There were 4 deaths from cancer, malignant disease (undefined).

The deaths of 2 infants, prematurely born, were registered.

Of 17 deaths from diseases of the brain and nervous system, 9 were from *convulsions*. Of the 9 victims of convulsions, 7 were infants under one year of age and 2 were children between the ages of one year and 5 years.

There were 17 deaths from diseases of the heart and blood vessels, and there were 8 deaths from bronchitis.

Two deaths were due to accidents by vehicles and horses, and one death was caused by drowning.

In 5 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under one year of age and the death of one person aged 63 years.

Fifty of the persons whose deaths were registered during the week were under 5 years of age (34 being infants under one year, of whom 8 were under one month old) and 27 were aged 60 years and upwards, including 11 persons aged 70 and upwards, of whom 2 were octogenarians, and one (a woman) was stated to have been aged 97 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and the Executive Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended August 11, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	July 21	-	*	*	5	-	-	2	-	1	2	11	-	*	*	*	21
	July 28	-	*	*	2	-	-	2	-	3	5	14	-	*	*	*	26
	Aug. 4	-	*	*	6	1	-	6	-	2	7	8	-	*	*	*	30
	Aug. 11	-	*	*	3	-	-	5	-	2	5	11	1	*	*	*	27
Rathmines and Rathgar Urban District	July 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	July 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 4	-	*	*	-	-	-	1	-	-	2	2	-	*	*	*	5
	Aug. 11	-	*	*	-	-	-	1	-	-	1	1	-	*	*	*	3
Pembroke Urban District	July 21	-	-	-	-	-	-	-	-	-	-	1	-	*	-	-	1
	July 28	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-
	Aug. 4	-	-	-	-	-	-	1	-	-	-	1	-	*	-	-	2
	Aug. 11	-	-	-	2	-	-	2	-	-	-	-	-	*	1	-	5
Blackrock Urban District	July 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	July 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug 4	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 11	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
Kingstown Urban District	July 21	-	*	*	-	-	-	1	-	-	-	1	-	*	*	*	2
	July 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 4	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 11	-	*	*	-	-	-	2	-	-	-	-	-	*	*	*	2
City of Belfast	July 21	-	*	*	11	-	-	2	-	3	5	7	-	*	*	*	28
	July 28	-	*	*	17	-	-	5	1	6	6	1	-	*	*	*	36
	Aug. 4	-	*	*	11	-	-	1	-	3	9	1	-	*	*	*	25
	Aug. 11	-	*	*	18	-	-	5	1	3	5	-	-	*	*	*	32

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended August 11, 1906, 4 cases of measles were admitted to hospital, 5 were discharged, there was one death, and 18 cases remained under treatment at the close of the week.

Seven cases of scarlet fever were admitted to hospital, 6 were discharged, and 24 cases remained under treatment at the close of the week. This number is exclusive of 14 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 2 were discharged, there were 2 deaths, and 19 patients remained under treatment at the close of the week.

Four enteric fever patients were admitted to hospital, and 17 cases of this disease remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 7 were discharged, there was one death, and 13 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended August 11, 1906, in 76 large English towns, including London (in which the rate was 14.9) was equal to an average annual death-rate of 14.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.0 per 1,000, the rate for Glasgow being 15.2, and for Edinburgh 13.2.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended August 11. From this return it appears that of a total of 28 cases notified 14 were scarlet fever, 5 diphtheria, 5 erysipelas, and 3 typhoid fever. Among the 252 cases of infectious diseases in hospital at the close of the week were 100 cases of scarlet fever, 28 of diphtheria, 45 of measles, 8 of erysipelas, 9 of whooping-cough, and 15 of enteric fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of July,* 1906.

Mean Height of Barometer,	29.991 inches.
Maximal Height of Barometer (9th, at 9 a.m.),	30.329 „
Minimal Height of Barometer (18th, at 8 p.m.),	29.601 „
Mean Dry-bulb Temperature,	59.8°.
Mean Wet-bulb Temperature,	55.8°.
Mean Dew-point Temperature,	52.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.394 inch.
Mean Humidity,	77.1 per cent.
Highest Temperature in Shade (on 22nd),	76.5°.
Lowest Temperature in Shade (on 4th),	47.4°.
Lowest Temperature on Grass (Radiation) (4th),	42.7°.
Mean Amount of Cloud,	65.2 per cent.
Rainfall (on 13 days),	1.023 inches.
Greatest Daily Rainfall (on 1st),	.282 inch.
General Directions of Wind,	W., N.W., S.W.

Remarks.

A favourable month of westerly winds, often cloudy skies, and frequent but not heavy showers. More than a quarter of the total rainfall for the month (1.023 inches) fell on the 1st (.282 inch), which was a cold, dull, wet day—the only inclement day of the whole month. The mean temperature was 60.7°, or corrected 60.2°. Once only, on the 1st, did the thermometer fail to reach 60° in the screen—on that day the maximum was 59.8°. On 10 days the temperature touched or exceeded 70° in the screen, the highest reading of all being 76.5° on the 22nd. The mean amount of cloud was 65.2 per cent.; at 9 a.m. it was 73.2 per cent., at 9 p.m. only 57.1 per cent. The duration of bright sunshine was estimated at 201.5 hours, or a daily average of 6.5 hours. On the 4th the sun shone for some 15 hours.

In Dublin the arithmetical mean temperature (60.7°) was 0.4° above the average of the 30 years 1871–1900 (60.3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 59.8°. In the forty-two years ending with 1906, July was coldest in 1879 ("the cold year") (M. T. = 57.2°). It was warmest in 1905 (M. T. = 63.8°); 1887 (M. T. = 63.7°); in 1868 ("the warm year") and in 1901 (M. T. = 63.5°). In 1900 the M. T. was 63.4°.

The mean height of the barometer was 29.991 inches, or 0.076 inch above the corrected average value for July—namely, 29.915 inches. The mercury rose to 30.329 inches at 9 a.m. of the 9th, and fell to 29.601 inches at 8 p.m. of the 18th. The observed range of atmospheric pressure was, therefore, .728 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.8°, or 1.4° above the value for June, 1906. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .465), the value was 60.2°, or 0.4° above the average mean temperature for July, calculated in the same way, in the thirty years 1871–1900 inclusive (59.8°). The arithmetical mean of the maximal and minimal readings was 60.7°, compared with a thirty years' average of 60.3°. On the 22nd, the thermometer in the screen rose to 76.5°—wind, W.; on the 4th the temperature fell to 47.4°—wind, N.E. The minimum on the grass was 42.7°, also on the 4th.

The rainfall was 1.023 inches, distributed over 13 days. The average rainfall for July in the thirty-five years 1866–1900, inclusive, was 2.560 inches, and the average number of rainy days was 18. The rainfall, therefore, and the rainy days were much below the average. In 1880 the rainfall in July was very large—6.087 inches on 24 days; in 1896, also, 5.474 inches fell on 18 days. On the other hand, in 1870, only .539 inch was measured on 8 days; in 1869, the fall was only .739 inch on 9 days; and in 1868, .741 inch fell on but 5 days. In 1905 only .821 inch fell on, however, as many as 17 days.

High winds were noted on 10 days, and attained the force of a gale on the 15th and 18th. Temperature reached or exceeded 70° in the screen on 10 days, compared with 17 days in 1905, 9 days in 1904, and 7 days in both 1902 and 1903. The thermometer failed to reach 60° on the 1st, when the maximum was 59.8°. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888 the maximum for July was only 68.7°.

Solar halos were seen on the 12th, 24th and 25th. A flash of lightning was seen on the night of the 28th.

The rainfall in Dublin during the seven months ending July 31st amounted to 13.664 inches on 122 days, compared with 11.022 inches on 109 days in 1905, 13.905 inches on 117 days in 1904, 19.072 inches on 131 days in 1903, 15.507 inches on 115 days in 1902, 11.432 inches on 93 days in 1901, 17.609 inches on 129 days in 1900, 14.416 inches on 107 days in 1899, 13.060 inches on 106 days in 1898, 15.600 inches on 125 days in 1897, 7.935 inches on 80 days in 1887, and a thirty-five years' average of 14.620 inches on 113 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. Thomas H. Hill, Sch., reports that the mean height of the barometer was 29.995 inches, the range of atmospheric pressure being from 30.338 inches at 9 a.m. of the 9th to 29.633 inches at 9 p.m. of the 18th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.9°. The arithmetical mean of the daily maximal and minimal temperatures was also 59.9°. The screened thermometers rose to 76.8° on the 22nd, and fell to 45.9° on the 4th. On the 4th also the grass minimum was 39.2°. On the 31st the black bulb *in vacuo* rose to 133.2°. Rain fell on 12 days to the amount of .949 inch, the greatest fall in 24 hours being .245 inch on the 1st. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 184.8 hours, of which 13.1 occurred on the 4th. In July, 1904, there were 201 hours of bright sunshine, and in July, 1905, 162.2 hours. The mean earth temperatures were—at 1 ft., 59.9°; at 4ft., 56.5°. The one-foot thermometer ranged between 57.3° on the 2nd and 3rd and 62.5° on the 23rd. The four-feet thermometer ranged from 55.6° on the 5th to 57.6° on the 31st.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 1.25 inches on 18 days. The maximal fall in 24 hours was .36 inch, measured on the 1st. The mean temperature was 62.3°, the range being from 79° on the 6th to 43° on the 4th. In July, 1901, 2.65 inches of rain fell at this station on 11 days; in 1902, 4.27 inches on 91 days; in 1903, 3.66 inches on 24 days; in 1904, 1.22 inches on 17 days; and in 1905, .98 inch on 20 days.

At White Cross, Stillorgan, Miss Muriel E. O'Sullivan measured 1.003 inches of rain on 15 days, the largest amount which fell in 24 hours being .200 inch on the 1st.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'Brien Furlong, C.B., reports that the rainfall in July was .97 inch on 14 days, compared with a twenty-one years' (1885–1905) average of 2.504 inches on 15.2 days. On the 12th the rainfall was .26 inch, and .23 inch fell on the 1st; the amount for the remaining 29 days was only .48 inch. In July, 1905, 1.03 inches fell on 15 days; in 1904, only .77 inch on 15 days; in 1903, 3.54 inches on 19 days; in 1902, 3.64 inches on 13 days; in 1901, 2.80 inches on 13 days; in 1900, 4.56 inches on 16 days; in 1899, 3.48 inches on 17 days; in 1898, .84 inch on 7 days; in 1897, 1.28 inches on 10 days; in 1896, 6.72 inches on 20 days. Since January 1, 1906, 12.92 inches of rain have fallen on 118 days at this station, compared with 18.38 inches on 129 days in the corresponding 7 months of 1900, 13.54 inches on 95 days in 1901, 16.90 inches on 111 days in 1902, 17.39 inches on 122 days in 1903, 13.69 inches on 110 days in 1904, and 13.59 inches on 104 days in 1905. The lowest July fall was .70 inch on 9 days in 1885; the highest, 6.72 inches on 20 days in 1896.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.112 inches on 15 days. The largest daily fall was .225 inch on the 12th. The total rainfall for the first 7 months of 1906 was 13.000 inches on 114 days, compared with 10.68 inches on 111 days in 1905. The mean shade temperature was 59.8°, the extremes being—highest, 74° on the 22nd; lowest, 41.0° on the 4th.

At the Ordnance Survey Office, Phœnix Park, rain fell on 13 days to the amount of 1.230 inches, the greatest rainfall in 24 hours being .305 inch on the 1st. The total duration of bright sunshine was 184.7 hours, the longest daily sunshine being 14.7 hours on the 4th.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1.095 inches on 13 days, compared with 1.932 inches on 11 days in 1905, 1.395 inches on 15 days in 1904, 2.790 inches on 17 days in 1903, 4.550 inches on 11 days in 1902, 2.390 inches on 10 days in 1901, 5.140 inches on 15 days in 1900, 3.480 inches on 14 days in 1899, 1.145 inches on 6 days in 1898, 1.625 inches on 10 days in 1897, and 5.726 inches on 16 days in 1896. Of the total rainfall .280 inch fell on the 1st. The total fall since January 1 has been 13.630 inches on 86 days, compared with 13.043 inches on 88 days in 1905, 15.702 inches on 109 days in 1904, 20.230 inches on 107 days in 1903, 19.641 inches on 95 days in 1902, 16.060 inches on 85 days in 1901, 23.331 inches on 120 days in 1900, 22.990 inches on 109 days in 1899, 14.645 inches on 94 days in 1898, and 19.750 inches on 116 days in 1897.

According to Mr. W. Miller, the rainfall in Cork City was 3.27 inches, or 0.82 inch more than the average, and the rainy days were 15. The greatest fall was .76 inch on the 27th, while .74 inch fell on the 26th. The mean temperature of the month was 59.0°, or 1.0° below the average for July. The thermometer rose to 74.5° on the 22nd and fell to 44.0° on the 9th. The rainfall for 1906 up to July 31 was 18.49 inches on 110 days, compared with averages of 20.20 inches and 108 days respectively

The Rev. Arthur Wilson, M.A., reports a rainfall of 4.150 inches at Dunmanway Rectory, Co. Cork. The heaviest falls in 24 hours were—.90 inch on the 31st, .87 inch on the 27th, and .77 inch on the 30th. On the last-named day there were very heavy showers and a storm. The first fortnight was very fine. The month as a whole was cool.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 59.9°, being 0.8° above the average for July during 19 previous years (1873-83 and 1898-1905), the extremes being—highest, 77.5° on the 22nd; lowest, 47° on the 4th and 5th. At Bournemouth the mean was 61.8°, the extremes being—highest, 77° on the 27th; lowest, 47° on the 13th. The mean daily range was 12.9°; at Bournemouth it was 16.3°. The mean temperature of the sea at Sandycove bathing-place was 56.9°, being 1.4° below the average for the month during the previous 5 years. The average relative humidity was 72 per cent. The rainfall was 0.94 inch on 14 days, being 1.71 inches below the averages for July during 16 previous years. At Bournemouth it was 1.35 inches on 9 days. The total duration of bright sunshine was 192.6 hours, being 17.1 hours above the average for the month during the previous 5 years, compared with 184.7 hours at the Ordnance Survey Office, Phœnix Park, and 252.2 hours at Bournemouth. On the 4th the duration was 15.7 hours at Kingstown.

PERISCOPE.

ARMY MEDICAL SERVICE.

The following is the official list of successful candidates for Commissions in the Royal Army Medical Corps at the recent examination in London, for which sixty-nine candidates entered :—

593	Stevenson, Gerald Hoey, M.B., B.Ch. (R.U.I.).
575	Spencer, John Heatly, M.B., B.S. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).
570	Forsyth, William Henry, M.B., B.Ch. (Edin.).
564	Heslop, Alfred Herbert, M.B., B.Ch. (Durham).
557	Amy, Archibald Craig, M.B., B.Ch. (Glasg.).
548	Mitchell, Wright, B.A., M.B., B.Ch. (Dubl.).
536	Sim, James Archibald Bruce, M.B., B.Ch. (Aberdeen).
528	Elliott, Edward John, M.B., B.Ch. (Edin.).
510	Lathbury, Ernest Browning, M.R.C.S. (Eng.), L.R.C.P. (Lond.), M.D. (Brux.).
508	Tough, Frederick William, L.R.C.P. & S. (Edin.)., L.F.P.S. (Glasg.), F.R.C.S. (Edin.).
503	Gibbon, Edward, B.A., M.B., B.Ch. (Dubl.).
501.5	Scaife, Cecil, B.A., M.D., B.Ch. (Dubl.).
487	Leslie, Robert Walter Dickson, L.R.C.P. & S.I.
479.5	Caddell, Ernest Duncan, B.A., M.B., B.Ch. (Dubl.).
475	Lochrin, Michael Joseph, L.R.C.P. & S.I.
474	Corbett, Daniel Maurice, B.A., M.B., B.Ch. (Dubl.).
474	Johnson, Benjamin, L.M. & L.S. (Dubl.).
468	Lunn, William Ernest Craven, M.B., B.Ch. (Durham).
467	Foster, John Rowland, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
464.5	Jacob, Arthur H., M.R.C.S. (Eng.), L.R.C.P., (Lond.).
439	Benett, Arthur Morris, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
458.5	Bradish, Francis Lyndon, L.R.C.P. & S.I.
457	Bracken, George Philip Alexander, L.R.C.P. & S.I.
451	Cooke, Owen Cunningham Preston, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
450	Boyce, William Wallace, L.R.C.P. & S.I.
445.5	Kelly, Carlisle, B.A., M.B., B.Ch., (Dubl.).
441.5	Denyer, Clarence H., M.R.C.S. (Eng.), L.R.C.P. (Lond.).
441	Bell, Whiteford John Edward, M.B., B.Ch. (Edin.).
439.5	Coutts, Duncan, M.B., B.Ch. (Aberdeen).
434.5	Loughnan, William Francis Brenan, L.R.C.P. & S.I., D.P.H., R.C.P. & S.I.

434	M'Carthy, Dennis Thomas, M.B., B.Ch. (R.U.I.).
433	Howell, Hector Lionel, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
431	Bowle, Charles William, B.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).
428	O'Keeffe, John Joseph, M.B., B.Ch. (R.U.I.).
425.5	Bennett, James Alexander, M.B., B.Ch. (Durham).
424	Browne, Thomas Walker, L.R.C.P. & S.I.
421	Thompson, William Irwin, B.A., M.B., B.Ch. (Dubl.).
419	Galgey, Reginald Charles, L.R.C.P. & S.I.
418	Kavanagh, Edward James, M.B., B.Ch. (R.U.I.).
415.5	Phelan, Ernest Cyril, B.A., M.B., B.Ch. (Dubl.).

LITERARY NOTE.

As the result of investigations extending over a period of many years, and made with the aid of expert assistance, Sir Almroth E. Wright, M.D., F.R.S., has written a book which Messrs. Archibald Constable, of London, will shortly publish. It is a work which cannot fail to have a marked effect on the results obtainable by all students using the microscope. Hitherto, this instrument has been all too commonly treated by rule of thumb, and without due attention to the principles of microscopic technique which are so essential to the attainment of accurate and scientific results. The object of the book is to show how to get from any class of instrument the best results in proportion to its range. The text of the whole book goes hand in hand with experiments. The work also contains a complete vocabulary of technical terms relating to the microscope.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following gentlemen, having passed the requisite examinations, were, at a meeting of the College held on July 20th, admitted ordinary Fellows :—Charles Henry Allen, M.B., Ch.B., Metheringham; James Reginald Atkinson, M.B., C.M., Crewe; Kaikhusru Dadabhoy, L.R.C.S.E., Edinburgh; John May Darling, M.B., Ch.B., Edinburgh; William Henry Duncan, L.R.C.S.E., Maryhill; Samuel Linley Heald, M.B., Ch.B., Leeds; Thomas Walter Irvine, M.B., C.M., Major, Indian Medical Service; Joseph Alan Longley, M.B., Ch.B., Leeds; John Clark Muir, M.B., Ch.B., Edinburgh; John King Osborne, M.B., C.M., New South Wales; George Potts, L.R.C.S.E., Maidstone; Andrew Taylor Ross, M.D., Glasgow; David Herman Wessels, M.B., Ch.B., South Africa; and Alfred Lambre White, L.R.C.S.E., Edinburgh.

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PART I.
ORIGINAL COMMUNICATIONS.

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ART. X.—*Clinical Pictures of Children's Diseases.* By W. LANGFORD SYMES, M.D., F.R.C.P.I.; Pathologist to the Royal City of Dublin Hospital; Physician to the Orthopædic Hospital, and to the Homes for Children, &c., &c.

NO. XXIV.

MARASMUS (PART I.).

ATROPHY; WASTING; ATHREPSIA; INANITION; CHRONIC GASTRO-INTESTINAL CATARRH; PYLORIC STENOSIS; PYLORIC SPASM; CHRONIC VOMITING; STARVATION; DUODENAL OBSTRUCTION.

WIDESPREAD in its prevalence and multiform in its modes of origin the condition known as marasmus heads the list of causes of infant mortality. The clinical condition is of the easiest to recognise, its causes difficult to assign, its treatment disappointing, while the pathological lesions are sometimes impossible to discover. It is a state of malnutrition resulting in the most extreme wasting of all the tissues of the body, sometimes without naked-eye lesions.

It cannot be too forcibly insisted on that marasmus is but a *symptom*. We are familiar with many diseases which produce wasting; but the term marasmus, or atrophy, has hitherto been reserved for a group of obscure cases where the essential cause could not be discovered, and whose pathology was not understood. In recent years some light has been thrown on these cases, although much remains for research.

Wasting is one of the commonest signs of disease in young children, and usually the causes are obvious on a careful examination. Tuberculosis[a] in its many forms, congenital syphilis, and respiratory obstructions, such as enlarged tonsils and adenoids, can be made out in a large number. Chronic diarrhœa and other digestive lesions account for a considerable proportion, while many more are due to the evil effects of acute disease. These causes are usually patent to a careful observer, and are not often passed over, but the group of conditions to be included in the term marasmus are seldom appreciated.

In a paper read before the Royal Academy of Medicine in 1898,[b] it was shown that in Ireland during the ten years ending with 1896 out of a total death-roll of 105,469 children under one year no less than 29,136 were certified as debility, atrophy, and inanition. This is a percentage of 27.6 of the known causes of infant mortality. Even making allowance for cases where the causes are evident, and also for uncertified deaths, there still remains an enormous number for investigation.

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[a] As tuberculosis is a well known cause of wasting, especially in its abdominal varieties, the following species must be remembered:—

ABDOMINAL TUBERCULOSIS.

I. Tuberculous Peritonitis—
  1. Miliary form, with great distension from flatus.
  2. Adhesive and fibrous varieties.
  3. Omental tuberculosis, with bands and masses of new growth palpable externally.
  4. Ascitic forms.
  5. Encysted collections of fluid.
II. Tubercular Ulceration of the Bowel.
III. Tabes Mesenterica, where the glands are affected.
IV. Tubercular Tumours of the Intestine, or "hypertrophic tuberculosis" of the bowel, where the wall of the bowel is thickened and infiltrated with the growth.
V. Pelvic Tuberculosis.

All of these varieties, with the exception of the intestinal tumours, which I have seen in adults, have come under my notice in children.

[b] Transactions of the Royal Academy of Medicine in Ireland. Vol. XVI., p. 381.

Most of these cases are first seen about the second and third months. They originate prior to this, and continue long afterwards, but about this time they have usually attracted the attention of even the most stupid nurses. Between the second and third year marasmus is again frequently observed, and often has its origin in some of these obscure dystrophies of earlier infancy.

There is an infinite clinical variety in the intensity of the atrophy, but, in the absence of special symptoms—*e.g.*, diarrhœa or vomiting—the degree of the wasting may be taken as the standard of its severity. In some cases there is pain in the abdomen, and in all the child is in a condition of discomfort, and presents a picture of the most abject misery. The prime cause of the wasting must be sought for, and the various ætiological factors differentiated. These causes are of a very varied character, and while some exhibit gross congenital organic changes, in others the pathology is obscure.

Symptoms.—The chief symptoms indicative of this condition will be found to be as follows:—

(1) *Wasting.*—The aspect of the child is striking. The face is thin and wasted, the features shrivelled and shrunken; the expression of the child is wretched in the extreme, and indicative of intense misery. The forehead and cheeks are wrinkled and old-looking, giving the child an aged appearance, as if after many years he has reached the end of a long life of suffering! The dwindled and shrunken frame, with the skin hanging in folds from the legs, thighs, and arms, the flesh wasted off the bones, the absence of all fat and subcutaneous tissue, the wasted muscles, with the shrivelled features and sallow "peg-top" face, forms a typical picture of starvation. The limbs are so thin that the joints stand out prominently, while from the same cause the feet appear unduly large and long.

With this emaciation will nearly always be found those well-known crescentic lines which skirt the borders of the mouth on each side—termed "Jadelot's lines." They are seen in most marasmic children, and are indicative of extreme digestive trouble, while they add to the misery of the child's expression.

The great guide in all these cases of marasmus is the weight. Without its regular observation no true estimate can be formed of the child's condition. Everything depends on the scales, and it is the sure and steady standard by which to alter or persist in our treatment. It should, therefore, be recorded on a chart—the child being weighed every week. These weight-charts are interesting, and it will be found that growth is not always uniform; a child will, if weighed every day, be found to remain stationary for several days, and suddenly takes a jump of 4 or 6 ounces in twenty-four hours. This is peculiar, and may cause undue alarm if the case is weighed too often. Although in urgent cases I have often insisted on a daily record, once a week is usually sufficient.

(2) *Irritability.*—These children never smile. No wave of joy ever flits across the face. Every element of anguish is graphically marked upon it—dissatisfaction and distress being depicted on the countenance. They are crying, cross, fretful, and sleepless. The child is very irritable when approached, and is all the time "whingeing" or "grizzling" in a miserable manner. Under these conditions, where the child dislikes being handled, the examination of the case is a matter of extreme difficulty, and sometimes has to be abandoned or postponed.

This irritability is in most cases present, and the child is extremely sensitive to touch. In bad cases the nervous symptoms are more marked. The reflexes are commonly dulled when the child is extremely wasted and collapsed, and the plantar or knee reflexes do not respond. As, however, nutrition improves I have always observed a normal return of the knee-jerk and an active plantar response.

In other cases tetany appears, and the familiar carpopedal contractions may be seen in the fingers and toes. Convulsions are observed in others, but they are not very common.

(3) *Collapse.*—In marasmus the child is frequently much collapsed. The face is deathly pale, or, as will be often observed, dusky, blue, and cyanosed. There is a livid dusky hue about the head, eyes, and extremities. The hands and nails, which resemble birds' claws, are blue and congested, or shrivelled and chilly, while the feet are clammy, cold, and purple. The fontanelle, if patent, is visibly depressed; the sutures, if not already closed, are very loose, and the bones exhibit little tendency to ossify though in apposition. The cranial bones are visibly delineated, the sutures prominent, and a fœtal condition persists. Even at two years old I have seen the fontanelle 6 × 5 finger breadths. The temperature, except some complication be present, is always low, and in many cases down to 95° or 96°. When the temperature thus falls and the weight goes down it is of the worst possible omen. The pulse here is now over 130, but is mostly quite imperceptible.

(4) *Vomiting* is a marked feature in a great many cases, and a chronic state of sickness persists. The vomited matter is at first food, but later a kind of "water-sickness," if I may so term it, supervenes, when the child constantly ejects mouthfuls of clear watery fluid. This vomiting has in many instances persisted for some weeks prior to the physician's visit. In some aggravated instances the child has vomited even the mother's milk, and was then reared artificially, with still more disastrous results. After a sequence of some eighteen different foods, all of which were alike rejected by the stomach, I have seen such cases, in which the most extreme marasmus and atrophy presented itself. These are most troublesome children to treat, and the prognosis is not favourable. It will be observed in some cases that, after being fed, the child will "pump" up the food, mouthful by mouthful, in a rhythmical series of regularly-punctuated ejections; at other times the whole

feed may be forcibly vomited at once, and in a third class of case one finds merely a persistent regurgitation or "possetting" of small quantities after each feed, but which, after many weeks' duration, tells seriously on the child's nutrition. Again, in a fourth category, where pyloric spasm has induced this condition, and still more where congenital hypertrophy of the pylorus or duodenal obstruction is present, the vomiting may assume a periodic or cumulative character, several feeds being ejected at once. But this is by no means necessary for the diagnosis of such a stenosis.

I have in some of my cases examined the vomited matters and found a positive reaction indicating the presence of lactic acid, and a negative result to the tropæolin, Günzberg, and other tests for free HCl. Gastric digestion is, therefore, seriously disturbed, and the abnormal secretion points to disorganisation of the glands. The mouth is frequently clean and healthy, but in other cases may be found extremely acid, as also may be the reaction of the stools. A growth of thrush in the mouth is not rare, but by no means frequently seen now. On one occasion I saw two lumbrical worms vomited by the child, but such are accidental associations. In many of the worst cases, however, the mouth is sweet and clean where the causes of the persistent vomiting are much more serious.

(5) *Condition of the Abdomen.*—The abdomen of a marasmic infant is usually distended. When the child is stripped and lying on his back the condition is instantly recognised, and the swollen belly stands out in marked contrast to the emaciated frame which supports it. This distension is very frequently present, and appears to be due in major part to the fermentation of improper food. The intestines can be felt easily through the attenuated parietes, provided the child permits a careful examination, and in bad cases they convey a peculiar sensation to the hand. I have repeatedly noted a "granular" shotty feel communicated to the fingers, as if the abdomen were filled with material of the consistence of porridge. This is not

dependent on nodular masses or bands of a peritoneal or tabetic nature, but is probably conveyed to the hand either from the omentum or the interior of the bowel, and may even have reference to the intestinal contents. The parietes being so wasted we get much nearer to the bowel than we do in any other cases. Whatever the meaning may be, the sensation is peculiar and the condition well-known to clinicians. Fermentation is responsible for much of the distension, and when this "podgy" condition of the abdomen is present the child often passes frothy, fœtid, lienteric motions, with granular particles of undigested food embedded in mucus, and expelled with the discharge of foul gas.

The belly in these cases is sometimes so tense that a board-like resisting sensation is conveyed on examination, so that a careful survey has to be frequently abandoned. In this condition he is often curled up as if suffering from painful and flatulent colic. If we can see the child when lying placid and naked we frequently observe peristaltic waves vermicularly travelling across the abdomen. This distension is not present in all cases of marasmus. It is, for instance, absent in cases where criminal starvation is practised, and where the intestine is empty and contracted. The reason is obvious, for the food (though erroneous) which in most cases is yet present, and fermenting in the bowel, in wilful starvation is absent.

This should be borne in mind, and may in doubtful cases put the physician on his guard lest the true cause of the malady escape his notice. Again, I have seen marasmus with a retracted or normal-sized abdomen in cases where pyloric spasm had induced it. Vomiting in these cases reduces the child rapidly, and little material passes through the pylorus for the purposes of either absorption, fermentation, or discharge. Hence in pyloric stenosis we find an empty intestine, a flat or even retracted abdomen, a state of constipation, and a child in a condition of advanced marasmus.

Another condition of the abdomen which is important to recognise is dilatation of the stomach or other part of the alimentary canal. I have seen some cases where a bulging globular prominence stood out in relief from the surface, indicating dilatation of the organ beneath, and, watching quietly for some minutes, suddenly a forcible peristalsis or contraction is seen to pass across it, as if to overcome some obstruction. In these instances obstruction has always existed, and they have afterwards proved to be either pyloric spasm, pyloric hypertrophy, or that terrible but rare condition—congenital malformation of the duodenum. Thus the condition of the abdomen becomes a most valuable guide to the physician in cases of atrophy. The liver has no uniform size or shape in atrophy. Usually it is palpable and on the large side, but nothing characteristic can be deduced from its examination. The spleen likewise observes no rule. Occasionally it is felt, but by no means always. The liver is, in my experience, the more likely organ of the two to arrest the attention. There are many indications that some of the metabolic processes performed by the liver in health, especially in regard to the final digestion and assimilation of proteids, are seriously at fault in many cases of marasmus.

(6) In most cases of atrophy one observes the child frequently keeps the hands in the mouth. They sometimes appear endeavouring to swallow them, and are constantly to be found sucking the lips or fingers. This is a sign of starvation. At other times champing movements of the jaw are noticeable and persistently present.

(7) *Diarrhœa* is, or usually has been, present in a large number of instances, and may accompany or precede the marasmic condition. The motions are seldom normal. Frequently the stools are green, curdy, and offensive; sometimes they are watery and discharged freely, while in other instances much mucus is voided from the bowel. There is, however, an important group of cases—the obstructive variety—where constipation is the rule, or rather the absence, of fæcal evacuation because the intestines are empty.

(8) The skin is pale, bloodless, and sallow, hanging in loose folds on the thighs and arms. It is inelastic and flaccid, and when pinched or drawn out remains *in situ* without any normal retraction to its former level. Sores and excoriations are commonly observed on the nates and scrotum, and the skin of the trunk is often rough and harsh. This harsh, rough, and dry condition of the skin is very characteristic, and in favourable cases, where the child recovers, a smooth surface is one of the first signs of returning nutrition. Crusts and scabs of previous sores and ulcers are often found. Another unhealthy condition is anasarca or œdema in the loose tissues of the eyelids or scrotum. In other cases purpuric blotches from subcutaneous hæmorrhage, or even rashes, are observed. The occurrence of purpuric eruptions indicates serious malnutrition, and demands a careful survey of the case. These children are often extremely tender to handle.

(9) The condition of the mouth is sometimes peculiar. The lips are often swollen, pallid, and everted. This appears in cases where a catarrhal inflammation is present. The mucous membrane is swollen, and the lips present a "gelatinoid" appearance. A glairy mucoid fluid abundantly exudes from the infiltrated mucous membrane, and is discharged in mouthfuls or comes up along with the vomited food. The whole inside of the mouth and lining of the cheeks is tumid and pale, and presents almost a blistered appearance. The lower lip is the first place it is usually observed. This condition of mucoid flux is sometimes so great that I have clinically described it as "water-sickness" in the absence of any more expressive term.

(10) *The Urine in Marasmus.*--Of much interest is the examination of the urine in marasmus. It is so difficult to collect from these infants that examinations are seldom made and few have been recorded. A copious deposit of uric acid crystals is very common. In two of my recent cases which I examined with care in each instance there was a remarkable crystalline deposit of leucin. Tyrosin needles were also seen in the second case, and in both cases

there was albumen. This excretion of leucin and tyrosin is interesting, and opens up a wide field for research. It may possibly throw a sidelight on some of the wasting in particular cases, as it shows some error or arrest in the normal digestion and assimilation of proteids. As far as we know, the normal digestion of coagulable albuminoids or proteids is first performed by the stomach. Here the gastric juice, by means of its hydrochloric acid and pepsin, converts them into albumoses and peptones, which are more diffusible, soluble, and less coagulable forms of proteids. The second step appears to be the further conversion of these products partly by the trypsin of the pancreatic juice, and partly by the erepsin of the columnar cells of the small intestine into leucin, tyrosin, and other amido-acids. In this form they now reach the liver by the vena portæ, and are here converted by the activity of normal hepatic cells into coagulable blood proteids, albumens, and globulins, and pass into the blood for tissue nutrition, while some are formed into urea. If assimilation is arrested at the leucin stage this body may be excreted and found in the urine.

In association with acute and extensive destruction of liver cells (as in phosphorus poisoning and yellow fever) leucin and tyrosin are found abundantly in the urine, being thus excreted, it may reasonably be supposed, since the liver had been unable to deal with them as it does in normal circumstances.

So far we have no demonstrable proof that in some cases of marasmus the liver cells are uniformly diseased or destroyed, but the occurrence of leucin in the urine, as in my cases, suggests the possibility of this being sometimes the case. Other factors, however, may be at work which may cause excretion of leucin besides hepatic cell destruction.

(*To be continued.*)

Art. XI.—*The Use and Abuse of Alcohol.*[a] By R. J. Kinkead, M.D., Dub.; Professor Queen's College, Galway.

Whatever you may think of the composition and delivery of this lecture, however much you may agree or disagree with the views I shall lay before you, there is at least one thing you cannot say, that the subject is a dry one. It is, however, a highly contentious one from start to finish, from the vexed question of pot-still or patent-still, of the most agreeable and safest form in which alcohol can be imbibed, of whether it is a food, or stimulant, or sedative or poison, to whether it ought to be used or should not be tasted at all.

As it would obviously be impossible to deal exhaustively with so vast a subject, on which there are such opposing opinions, in a single lecture of reasonable duration, I shall only put before you something of the action of alcohol on the human body, including in that term mind, for I think I shall be better able clearly to convey to your comprehension how the abuse of alcohol affects the intellect, and perverts the moral sense, by dealing with mental action as if it were a force liberated by the cells of the brain.

To promote temperance is to benefit our people and our country -"for the abuse of alcoholic stimulants is a most potent and deadly agent of physical degeneration."

Although the existence of the temperance movement is evidence of progress; although it is not now, as it was in our grandfathers' days, good form and common custom to get drunk after dinner, and be carried to bed senseless, or left lying under the table to sleep off the effects of the liquor consumed; if drunkenness be no longer fashionable nor reputable, nor a necessary qualification for being considered a man or deemed a good fellow, yet it is common knowledge that the abuse of alcohol is widely--far too widely—prevalent among all classes, and in both sexes.

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[a] A lecture delivered before the Literary and Debating Society of the Queen's College, Galway, on March 2nd, 1906.

"No disease," says the late Dr. Norman Kerr, a high authority on the subject, "is more widespread. In the whole course of even an extensive acquaintance it may happen that no member has been known to have suffered from any of the leading diseases which prevail in our islands, that no one has been laid low by phthisis or cancer, but there are very few families in the kingdom which have not had at least one relative who has been the subject of inebriety. In but too many cases this family failing has unhappily not been confined to one member of the domestic circle."

Recognising the degradation, the degeneration, the misery, the ruin, the crime resulting from drink, it is not to be wondered at that many should cry: "Touch not the accursed thing," and should not only practise themselves, but endeavour to enforce on others, total abstinence from alcohol; nor considering that alcoholic beverages, in some shape or form, have been in use amongst men from remote antiquity, that from time immemorial good fellowship, friendly reunions, rejoicings, and celebrations of all kinds have been associated with wine and wassail, that there is enjoyment in the use of alcoholic drinks, that they lend, a factitious if you will, brilliancy to the feast, that wine makes glad the heart of man, can we be astonished that total abstinence should be regarded as a fad, and its advocates as harmless lunatics—one party exclaiming, "Oh, thou invisible spirit of wine, if thou hast no name to be known by, let us call thee devil; " the other, "Come, come, good wine is a good, familiar creature if it be well used."

It has been said that men disregard breaches of the moral law because punishment is remote, whereas they are more careful to observe the civil law, its punishment being immediate. If this be so, then those who indulge themselves, knowing it to be wrong, and being remonstrated with admit the error, who disregard the danger to their souls and the unhappiness they cause their families, thinking they shall have time enough to repent and reform by and by, are likely to cry pause if they realise, before it is too late, that they are injuring their bodies, and if they are convinced that for the pains and penalties of bodily damage there is no by and by, they are immediate.

"By almost universal consent," says Dr. Norman Kerr, "drunkenness has been regarded but as an act of folly, a sin, a vice, or a crime. The finger of scorn has been pointed at the sot as an object of ridicule or contempt. The drunkard has been stigmatised as a good-for-nothing scapegrace, who loves excess for its own sake, who lives but to gratify his vitiated tastes, who from inherent depravity knowingly and unblushingly prefers vice to virtue, intoxication to sobriety. The theologian denounces him as a sinner, the judge punishes him as a criminal.

"This is not only unwise, it is unjust and cruel, for in many cases from inherited neurotic conditions, or acquired constitutional defects—in all cases after a time—inebriety is a disease."

That a drunken person is mad, that habitual intoxication is a condition of insanity, that more frequently than is supposed inebriety is the sequence of antecedent nervous disorder, either hereditary or acquired—that is, that habitual drunkenness is frequently the product of disease—may appear startling statements, nevertheless they are true.

A dominant idea is established, commonly expressed as a "craving for drink," so powerful as to be practically irresistible, self-control falls before it, and it is yielded to, be the consequences what they may.

To comprehend how this may be, to understand how alcohol affects the body, it is essential that I should set before you something of the working of that marvellous machine—the living being.

The human body is a self-developing, a self-repairing, and a self-destroying machine in which, life and death, growth and decay, progress side by side; in youth growth exceeds decay; in middle age they are equal: as we descend the hill of life decay exceeds repair, until, finally, that stage is reached, where repair ceases, decay reigns supreme, and this we call death.

For health, in fact for life, decay is as imperative as repair. Paradoxical as it may seem, death is essential for life. Whatever checks or impedes the death and eliminations of tissue is as hurtful to the body as that which hinders repair.

The materials for repair and growth are provided by the food, solid, liquid, or gaseous, which we take in: decay is the result of the deterioration, disintegration, and combustion of tissue in the performance of work and bodily functions.

Vital phenomena are produced and controlled by the nervous system, and nutrition and force are conveyed to the nervous system and throughout the body by the blood.

The human, like every other, machine requires fuel, and from the fuel in the shape of food it develops its own heat and force, and effects its own repairs.

The easier and more completely a product is converted into heat and force, the more economical, and in some cases the more valuable, it is as a food; a fact which has to be borne in mind as regards alcohol, along, however, with another fact, that such easily convertible fuel may be as dangerous as a high explosive, that burning rapidly and leaving little ash it is likely, unless used with extreme moderation, to damage the machinery and take charge of the machine.

The engineer who controls this wondrous machine resides in, and the power that runs it emanates from, the brain.

The brain is composed of a white and grey substance. The grey contains the active elements, the sensory cells, and motor centres. The white is mainly for conduction and harmonious co-operation.

It is a double organ, having right and left halves, each capable of separate action. It may also be considered as divided horizontally—above, the hemispheres, the seat of thought, the throne of the will, the centre of activity, the plane of consciousness; below, masses of nervous tissue, the basal ganglia lying on the floor of the skull, the guardians of the processes of organic life, the governors of automatic action, the sentinels at the gate, watching for and responding to stimuli, which excite reflex action, and so keep the heart beating and respiration from failing, and thus preserve life when the higher centres are paralysed and consciousness and sensation are abolished. When, for example, a human being has imbibed sufficient alcohol to produce that condition of anæsthesia we call being "dead drunk"; dead to internal impressions, dead to external excitations, the only life left in him being just sufficient to preserve existence until the poison shall perchance be slowly eliminated.

From the brain filaments pass down the spinal cord, issuing all along its course at both sides in the form we call nerves, sub-divide and branch out, so that each organ, each muscle fibre, each particle of skin, is supplied; these filaments convey to the sensory molecules in the brain an immediate impression of whatever affects their terminations, and bring back from the brain a motor impulse.

All our knowledge of the world outside us, all our consciousness of what goes on inside us, is derived from these sensori-motor impressions, which are, as it were, registered in the cells of the brain. The more powerful and more frequently repeated the more permanent the impression made, and those impressions which are made in childhood and youth are indelible, and remain with us when later ones fade away, partly because they are incorporated in the growing cells, as well as from the fact that the nerve centres grow to the mode in which they are exercised, hence reaction to sensori-motor impressions becomes automatic, and thus very complex actions are executed without the attention, or even the consciousness, of the individual.

It is this that makes the training and discipline of youth of such supreme importance, as the habits of thought and action, then acquired, and the emotions provoked by daily and hourly sensations become fixed and dominate life.

To enable the nutritive materials and the heat and force producing elements to be distributed and utilised there is a beautiful system of conduits, at the head of which stands that misunderstood and much maligned organ, the heart.

The heart of man has been declared to be deceitful above all things and desperately wicked, a statement which has conveyed infinite comfort to, and conferred a sense of superiority on, the female sex.

The male persuasion find consolation in the fact, so chameleon-like are its alleged attributes, that it has failed the wit of man to describe the heart of woman. It has been said to be loyal, treacherous, steadfast, ever variable, true, false, artless and fresh, a rather decayed but well-known work of art, loving, cruel; in short, to be not one but all mankind's epitome.

In that, alas, too often temporary insanity which, at one time or other, afflicts both sexes, strange delusions arise, and caricatures of the heart, especially effective if transfixed with arrows, are exchanged as evidences of affection. From popular belief in its being an article of barter, and the facility with which it is considered, that it can be passed from person to person, one would suppose the heart to be a sort of household chattel or species of stock transferable on demand, and the avaricious or enamoured one, with all seriousness, offers his heart and hand, or exclaims, "Darling, accept my heart and give me thine." Yet he would hesitate to say, "Dearest, I tender thee the pump which pulsates in my bosom," knowing that if she was a sensible girl, who had gone to college, and attended natural philosophy lectures, she'd reply, "Don't talk nonsense; I've no use for an extra pump, a ring, or a bracelet, and a satisfactory settlement would be more to the purpose."

It is a sad fact there is no poetry or sentiment about the heart, it can't hate, it can't love, it is neither courageous nor cowardly, it does not yearn over you, nor turn from you, and it is just as easily set palpitating by an undigested cucumber as by the most ardent affection or noblest aspirations. It is nothing more than a thoroughly effective double pump, worked and controlled by the nervous system, which drives the blood to every nook and corner of the body, knowing and caring no more of when a young man's or woman's fancy lightly turns to thoughts of love than the pump which fills the reservoir which is supposed to supply us with water.

The arteries which convey the blood from the heart divide and dwindle, becoming more numerous and smaller until they terminate in innumerable minute vessels of most delicate texture, which penetrate the substance and ramify on the surface of every portion of the body. From these minute vessels commence the smallest veins which, joining each other, increase in size and diminish in number until finally two large ones pour the blood back into the heart.

To each of these vessels and all along their length nerve fibres are attached, by means of which the cerebral engineer regulates their calibre and controls the current of the blood. According as the nerve centres are stimulated or depressed the vessels are contracted or dilated and the flow of blood within them is accelerated or retarded.

This effect may be produced by mental action, by stimuli from without, or by deleterious matter held in solution in the blood.

The blood may be vitiated by products produced within the body, or by substances from without introduced through the lungs, the stomach, or the skin, and thus not only is the nervous system affected, the control of the engineer interfered with, and reason perverted, but the organs and tissues are injured.

Of the pernicious substances which from without pass into the blood none are so common, none cause more damage than alcohol and narcotics. Others, indeed, may kill the body; sooner or later the *abuse* of alcohol does that, but it also destroys the mind, perverts the moral sense, and degrades man below the level of the beasts.

Alcohol is a combination of C_2H_6O; it is the product of a process of fermentation induced by the action of a microscopic fungus, yeast, upon certain kinds of sugar—for example, that derived from the grape, corn, starch, milk, &c. It may also be obtained synthetically from its elements.

Absolute alcohol containing not more than 1 per cent. of water, far too strong for consumption, is prepared by extracting water from the less strong ethylic alcohol and by subsequent distillation. It is very volatile, boiling at 172° F. Applied to the skin it produces a sensation of coolness, due to its rapid evaporation, but if the application is continued sufficiently long irritation is excited, and when applied to mucous membrane the irritation ensues immediately.

The sensation of increased warmth usually experienced after taking any alcoholic liquid is deceptive: it is merely due to the irritation of the stomach and the increased circulation of blood through the cutaneous vessels.

There is scarcely any other agent the internal action of which varies so much according to the dose taken. In very small quantity it promotes the functional activity of the stomach, heart, and brain: undergoing combustion within the tissues of the body it imparts warmth to them and yields force for the performance of their vital functions.

According to the experiments of Dr. Frankland and others the burning of one gramme ($15\frac{1}{2}$ grains) of alcohol yields sufficient heat to raise the temperature of 7 litres of water 1 per cent. C., and the burning of one gramme of cod liver oil suffices to raise the temperature of 9 litres of water 1 per cent. C.

In taking three tablespoonfuls of the oil daily about the same amount of warmth is afforded to the body as that given by four tablespoonfuls of absolute alcohol—the quantity contained in a bottle of light claret or hock. The oil, as doubtless many of you have experienced, is assimilated with difficulty, while for that of the alcohol scarcely any exertion of the working cells is required.

In this sense alcohol is a food or fuel, for we must regard as food not only the building material but all substances which, by combustion in the tissues, afford heat to the organisation, and by so doing contribute towards the production of vital force, and keep up the powers of endurance: at the same time old flesh is removed and meat food is appropriated as new flesh quicker than when no alcohol is taken. But in cases where food is enjoyed and a sufficient quantity can be digested the consumption of alcohol is useless and probably injurious.

Alcohol diluted with 90 per cent. of water may be given with advantage in small doses where it is desired to sustain the strength, but where the digestive organs refuse to tolerate a more substantial form of nourishment in quantities that would answer the necessities of the case.

In somewhat larger doses, but not sufficient to produce intoxication, alcohol causes a distinct decrease of temperature and capacity for muscular exertion, and the excitement at first induced is followed by a longer continuing lassitude and drowsiness. There is "lessened consciousness, lessened sensibility to light, to sound, to touch. The higher the sensibility of the part under ordinary circumstances the more obvious its anæsthesia under the influence of alcohol."

Larger and long-continued doses exercise a pernicious influence on the brain cells, and cause fatty accumulation in other organs, particularly in the liver, heart, and connective tissue. The blood vessels become diseased, and frequently contraction and hardening of the liver and the kidney, and condensation of the lung tissue sets in. This shrinking of tissue seems to depend on the direct irritation produced by the presence of unoxidised alcohol.

The resulting inefficiency of the machine to resist strain is testified by the late celebrated Dr. Christison— "I have had," he says, "a fearful amount of experience of continued fever during many an epidemic, and in all my experience I have only once known an intemperate man of forty or upwards recover."

The normal quantity of blood circulating in the brain is estimated at from one-sixth to one-fifth of the entire amount contained in the body: it is, therefore, evident that mental action must be seriously affected by alterations in the circulation.

The action of alcohol on the mind is produced partly by increasing or decreasing the blood supply, partly by the application to the nerve cells of alcohol in the blood.

At first, when taken in moderation, the effect of alcohol is stimulating, increasing mental activity, giving rise to pleasurable emotional exhilaration: but consumption being continued, excitement increases, there is confusion of ideas, uncertainty of motion, and loss of volitional contral: the mind works automatically in consonance with inherited disposition, or the mode to which the nerve centres have grown by habit, and so according to the nature and training of the individual are exhibited generous impulses or brutal passion—"the coward shows up more craven, the braggart more boastful, the cruel more merciless, the untruthful more false, the carnal more degraded."

Finally, the higher brain centres are paralysed and the imbiber falls an inert, insensible mass.

(*To be continued.*)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Handbook for Midwives and Maternity Nurses. By **Comyns Berkeley**, B.A., M.B. Cantab.; M.R.C.P., M.R.C.S.; Assistant Obstetric Physician to the Middlesex Hospital; Lecturer on Midwifery at the Middlesex Hospital; Senior Physician to Out-Patients at the Chelsea Hospital for Women; Examiner in Midwifery to the Central Midwives Board. With 58 Illustrations. London: Cassell & Co., Ltd. 1906. Pp. xii + 283.

In the course of last year we published in these columns a review of a work entitled "A Manual of Midwifery," written by Dr. Henry Jellett, and published by Messrs. Baillière, Tindall & Cox. In our present issue we desire to notice a work entitled "A Handbook of Midwifery for Midwives and Maternity Nurses," written by Dr. Comyns Berkeley, and published by Messrs. Cassell & Co. In the present instance we propose to depart from our usual method of reviewing, and to publish side by side a series of extracts from both works. In the case of the extracts from the longer work, we have cut out any matter which may not be of value to nurses. In the case of the shorter work, we have published the extracts exactly as they stand.

1st *Extract.*

Palpation.—Palpation is accomplished by four distinct movements:

1. Superior palpation.
2. Median-lateral palpation.
3. Inferior palpation.
4. Pelvic palpation.

In the first three of these the

The Diagnosis of the Presentation and Position of the Fœtus.— . . . The examiner sits by the side of the patient at the level of the pelvis, and practises successively three grips, or methods of appyling the hands. If further information is required, he turns in the opposite direction, midwife stands on the right side of the woman and looks towards her face. In the fourth, on the right side also, but looking towards her feet.

1. *Superior Palpation.*—By gentle pressure on the fundus of the uterus with the palms (*sic*) of both hands, the shape of the upper pole of the fœtus may be determined. An indefinite body suggests that the breech is lying uppermost; a hard, round body, separated from a broad surface (the back) by a groove, would point to the head being in this position, that is, the fœtus would be lying in a breech presentation. If the body at the fundus can be pushed easily from side to side, this is an additional indication that it is the head. Again, neither an indefinite nor a hard, round body may be felt, in which case a transverse lie would be suggested (Fig. 12).

2. *Median-lateral Palpation.*—The palms of the hands are placed on each side of the abdomen at the level of the umbilicus. On moving them from side to side, if the fœtus is in the longitudinal lie, it will be noticed that there is greater resistance on one side than the other, and this greater resistance is usually on the side to which the back is turned. To verify this, place one hand on the fundus of the uterus, and with the other hand press on

so as to face her feet, and practises a fourth grip.

First Grip.—The first grip, or the fundal grip, is made as follows:—Both hands are placed over the upper part of the uterus, slightly to each side of the middle line, in such a position that the fingers roof over the fundus, then by gentle depression of the tips . . . the outlines of the portion of the fœtus which lies under the hands are determined. In almost every case, a round, resistant mass can be felt lying, either in the middle line, or somewhat to one or other side under the arch of the ribs. This mass consists of one or other pole of the fœtus. To distinguish which pole it is, we must ascertain its mobility, its shape, its size, and its consistency. The head is more movable than the breech . . . In consequence of this, it is possible to ballott the head between the hands—a process which is impossible in the case of the breech. In shape, the head is rounder and more uniform than is the breech. It is separated from the trunk by a groove or depression at the site of the neck, while the outline of the breech is continuous with that of the trunk. . . .

Second Grip.—The second, or umbilical, grip is made by applying both hands to the sides of the uterus, so that the fingers lie at each side of the middle line, about the level of the umbilicus. Then, by gently depressing and rotating the fingers as before we can, in the large majority of cases, determine the fact that there is a flat resisting mass at one side, while at the other there is either no marked resistance, or one or more small irregular either side of the abdomen. The fundus will move more when the pressure is applied to one side than when it is applied to the other, and to the side on which pressure causes the most movement the back of the fœtus will be directed. Opposite to the side where the greatest resistance was noticed the limbs of the fœtus may be felt as irregular projections. If the fœtus is lying transversely, then the hard, round head will be found on one side of the abdomen, and the indefinite breech on the other (Fig. 13).

3. *Inferior Palpation.*—With the right hand the midwife grasps the lower pole of the fœtus, the thumb being on one side of the median line, the fingers on the other. By this means the hard, round outline of the head can be diagnosed, and by a lateral movement of the hand one is able to tell whether the presenting part is fixed in the brim or not. In the case of a brow presentation the head is high above the brim (Fig. 14).

prominences can be felt. If there is any difficulty in determining the existence of greater resistance at one side than at the other, the hands placed at each side of the uterus are moved synchronously, first towards one side and then towards the other. By this means it will be found that a greater resistance is offered to one hand than to the other. If this area of resistance is followed upwards and downwards it will be found to merge itself in the fundal pole of the fœtus above and in the pelvic pole of the fœtus below. This resistance is caused by the presence of the back of the fœtus, while the irregular prominences at the opposite side are formed by parts of the limbs. More rarely, the umbilical grip may determine the presence, not of the smooth and more or less flat outline of the back, but of a rounded mass similar to the mass which is usually found at the fundus. This mass is formed either by the fœtal head or breech.

Third Grip.—The third . . . grip is the first of two forms of pelvic grip. It is made with the fingers of one hand as follows:—Separate the fingers of the right hand from the thumb as far as possible. Then sink the fingers into the false pelvis immediately above Poupart's ligament on the patient's left side, and the thumb into a corresponding point on the right side. If the fingers and thumb are then approximated, they will find between them a solid body. . . . If the head is not fixed it is more movable than the breech on account of the cervical articulations. . . . In the case of a vertex presentation, as has been mentioned, the groove of the neck runs obliquely upwards, being lowest on the side of the back, inasmuch as the chin lies higher than

4. *Pelvic Palpation.*—If the head is fixed, that is, if it has sunk into the pelvis, the midwife is able to tell by pelvic palpation whether the presentation is vertex or face or brow. The fingers of both hands are pressed down into the pelvis as far as possible. If the fingers of the hand corresponding to the side to which the fœtus's back is directed dip down the farthest, then the presentation is a vertex; if they do not dip down so far, then it is a face or brow presentation, and in these latter cases an angle can be felt between the back of the fœtus and the head (occiput), whereas in the former case it cannot. In a brow this angle is not so well marked as in a face presentation (Fig. 15).

—Berkeley, pp. 80–85.

the occiput. Also the head lies higher above the brim on the side of the face—*i.e.*, on the opposite side to that at which the back is felt—than it does on the side of the occiput. In the case of a brow presentation, the groove of the neck is almost horizontal, as the occiput and chin lie almost on the same level. In the case of a face presentation, the groove of the neck again runs obliquely, but it is higher on the side of the back, as the chin here lies lower than the occiput. . . .

Fourth Grip.—In making the fourth or second pelvic grip the examiner turns round so as to face the feet of the patient. He then places the finger-tips of both hands above Poupart's ligament, one on each side, and endeavours to sink them down as far as possible into the pelvic brim. . . . If the head has sunk deeply into the pelvis, the diagnosis of the actual presentation is made by noting the difference in its level at each side. . . .

—Jellett, p. 171.

In both books the method of performing abdominal palpation is illustrated by four sets of drawings. The sets are to all intents and purposes identical, save that one set is in wash, the other in line drawing.

2nd Extract.

The prophylactic treatment of rupture of the perineum comprises :—

Promoting flexion of the infant's head.

Delivering the infant's head between the pains.

. . . Numerous methods have been recommended for preventing laceration of the perinæum . . . In whatever method is adopted, the following objects must be kept in view :—

. . . . .

Promoting Flexion of the Infant's Head.—When the occipital bone engages under the symphysis pubis preparatory to extension it does so according to the previous amount of flexion at one of two points: either in the region of the occipital protuberance if the flexion has not been perfect, or at a spot where the head joins the neck if it has.

In the first instance the fœtal head during its extension rotates round the occipital protuberance as a centre, so that the diameter distending the vulva is the occipito-frontal, which measures four and a half inches. In the second case the fœtal head rotates round the nape of the neck as a centre, and the diameter distending the vulva is the suboccipito-frontal, which measures four inches.

As there is obviously less risk of a ruptured perineum the smaller the diameter of the fœtal head that distends it, the midwife must direct all her efforts to obtain as much flexion of the fœtal head as possible before extension commences, in order that the smaller suboccipito-frontal diameter may eventually distend the vulval orifice, and this may be done as follows (Fig. 33).

The patient being in the left lateral position, with a pillow between her knees, and her buttocks well over the edge of the bed, when the fœtal head commences to distend the vulval orifice, the midwife passes her left hand over the patient's abdomen and between the thighs, so that the fœtal head during its expulsion can be grasped by the fingers. At the same time she arches her right hand over the perineum, so that the thumb is on one side just in front of the anus, and the fingers are on the other. When a pain comes on the patient is told to cry out and not to strain.

(2) *Maintenance of Flexion of the Head.*—. . . If the superior portion of the occipital bone engages beneath the symphysis then, as the head rotates round this point during extension, a diameter approximately corresponding with the occipito-frontal must distend the vaginal orifice. If, on the other hand, a point on the occipital bone below the occipital prominence fixes behind the symphysis the sub-occipito-frontal diameter will alone have to distend the vaginal orifice—that is to say, a diameter of four inches instead of one of four and a half inches. The method of maintaining flexion will be described presently.

(3) *Delivery between the Contractions.*—If the head is expelled by a uterine contraction at a time when the patient is straining and bearing down forcibly, the danger of perinæal laceration is greatly increased, as is the difficulty of bringing out the head in the most suitable position. If, on the other hand, we can prevent the head from coming out during a contraction we can deliver it by expression from behind the anus, assisted by the voluntary efforts of the woman as soon as the contraction is over. . . As soon as the birth of the head appears imminent take away the towel, or whatever it may be, upon which the woman is pulling, and as soon as a contraction ensues desire her to take deep breaths or to cry out, as by so doing she prevents herself from bearing down. Then, as soon as the contraction has passed off, endeavour to express the head in the manner which we are about to describe, and, if further help is required, desire the patient to strain down. . . .

The due performance of these objects will, we consider, be best ensured by the following method :—

The midwife, with her right hand, then pushes the fœtal head as far forward as possible, whilst at the same time, with her left hand, she draws it forward. By this manœuvre she may be able to keep the fœtal head flexed until the nape of the neck lies beneath the symphysis pubis.

Delivering the Fœtal Head between the Pains.—It is a matter of common observation that the perineum is much more likely to be ruptured if the fœtal head is expelled during the height of a pain, when the woman is straining, than if it escapes after the pain has passed. The midwife should, therefore, just when the fœtal head is about to be born, tell the patient to breathe deeply, and not to strain, whilst some authorities advocate holding the fœtal head back. When the pain has ceased, an endeavour should be made, after the head has been brought as low as possible by the first manœuvre, to extend, and so expel, it by pressure with the right hand in the manner described above.

—Berkeley, pp. 117-120.

The patient lies on her left side, her buttocks projecting beyond the edge of the bed, her legs drawn up and separated by a pillow. The obstetrician, standing by the side of the legs at the level of the buttocks, passes the left hand over the abdomen of the patient, and brings it between the thighs from before backwards, in such a manner that the advancing head can be grasped by the fingers when required (v. Fig. 198). When a contraction occurs the patient is told to cry out and not to strain. If by this means the force of the contraction is so weakened that the head is not expelled, so much the better. If, however, the contraction is strong enough to drive the head downwards all we can do is to try to bring the latter down in the most favourable position, as it is inadvisable to endeavour to hold it back. With the fingers of the left hand applied to the scalp, endeavour to draw the head as far forwards into the arch of the pubis as possible, while with the heel of the right hand endeavour to press the head forwards, and at the same time to keep it in a position of flexion until the occipital prominence or a point below it lies beneath the symphysis.

—Jellett, pp. 341-344.

In both books there is an illustration of the method of preserving the perinæum recommended by the writers. These illustrations are identical, save for the position of the fingers of the right hand.

3rd Extract.

6. *Attention to the Shoulders of the Infant.*—After the birth of the head the neck should be examined to see that the cord is not twisted round it, for if it should be, it may prevent the body from being born and cause suffocation.

As soon as the head has been delivered, the next duty of the obstetrician is to ascertain that the cord is not twisted round the neck. To do this, he slips one or two fingers into the vagina until the neck is reached, and feels carefully

If the cord is round the neck a loop should be drawn down and slipped over the head, or pulled loose so that the shoulders can pass through it, and if this cannot be done it must be ligatured in two places, cut between the ligatures, and the infant delivered as soon as possible, or the cord may be nipped with the left thumb and forefinger, whilst the fingers of the right hand feel on which side it is pulsating; the cord is then divided, the end on the pulsating side being held till the infant is delivered, after which it is tied. Another method is first to divide the cord, then see from which end the blood is spurting and ligature that.

If the cord is clear of the neck the shoulders are generally expelled with the pain succeeding that which delivered the head, and during their expulsion the infant's head may be lifted forward towards the mother's abdomen to expedite the delivery of the posterior shoulder, and then backwards towards the perineum for delivery of the anterior shoulder. If the succeeding pain is so long coming on that suffocation is threatened, which may be seen by the infant's face getting black, an attempt must be made to express the body of the infant by pressure on the fundus of the uterus, and failing this, the index finger must be hooked under its armpit and careful traction made. If the armpit cannot be reached, then careful traction must be made on the head.

—Berkeley, p. 120.

in all directions. If the cord is round the neck it must be set free in some manner, as otherwise it may be so short as to prevent the birth of the fœtus. The usual method of doing this consists in drawing down a loop and slipping it over the head. If there is a second loop it must be drawn down in a similar manner. In some cases the cord may be so tightly round the neck that it is impossible to draw it down, and, as immediate delivery of the fœtus is necessary, some other method of freeing it must be adopted. Accordingly, in such cases make the patient bear down, or apply pressure over the fundus of the uterus, and as the fœtus descends slip the cord first over one shoulder and then over the other. The result of this is that the fœtus descends through the loop in the cord. If the portion of cord round the neck is so short as to prevent even this manœuvre, the loop must be divided with scissors and the fœtus quickly delivered by pressure upon the fundus and traction on the head. The fœtal end of the cord is then immediately ligated. . . .

If the cord is not round the neck . . . it is not necessary to unduly hurry the expulsion of the trunk. Usually, in half a minute or so after the birth of the head, a uterine contraction occurs and drives the shoulders down. As they descend, lift the head forwards between the thighs in the direction of the mother's abdomen, in order to bring the posterior shoulder over the perinæum. Then draw the head slightly backwards in order to bring the anterior shoulder from behind the symphysis. In this way both shoulders are delivered, and by again drawing the head and shoulders forward the rest of the body follows. The left hand on the fundus should follow down the descending uterus, and note that it is contracting properly. If it is necessary to expedite the expulsion of the shoulders for any reason always endeavour to do so first by pressure over the fundus, and if this fails then apply traction to the head. . . . If we are finally obliged to pull upon the head we must at the same time rotate it gently in whatever direction rotation of the shoulders is occurring. It is advisable to pass the fingers into the vagina along the child's body to ascertain the position of the shoulders, and if either axilla has descended sufficiently low to be within reach to hook a finger into it and apply traction. . . .

—JELLETT, pp. 346, 347.

4th Extract.

GROWTH.—At birth the infant usually weighs about seven pounds. For the first three days it loses about four ounces in weight, the loss being due to the passage of urine, fæces, and the absence of food. At the end of the week the infant should have regained this loss, and for the next six months it increases about one ounce a day, so that in this time it about doubles its weight, and trebles it in a year. The best sign of health in an infant is that its weight is normal; if, therefore, it does not increase in weight to the proper amount, or if it loses weight, careful attention must be directed to the quality and quantity of its food and its general condition. The infant should, therefore, be weighed weekly.

[Here follows "Hieschmann's" Table.]

—BERKELEY, p. 220.

The average weight of the infant at birth is about seven pounds. During the first two or three days there is usually a loss of weight of about half a pound, but as soon as the cord has separated and commenced to cicatrise the infant begins to regain its weight, and, by the end of the seventh or eighth day, is usually as heavy as it was at birth. From this time onwards it should gain weight steadily, and any failure to do so shows that something is wrong, and that either the infant is suffering from some unrecognised complaint that interferes with its assimilation of food, or that the food it is receiving is not of the proper nature. A gradual and regular gain in weight is one of the most important and reliable indications that the infant is thriving, while a cessation to gain weight, or a loss in weight, is conclusive evidence of the opposite.

> . . . . . It is most important that the medical man should personally insist on the infant being weighed weekly, and that if it is found not to have gained in weight he should ascertain the cause of its failure to do so. . . .
>
> [Here follows "Fleischmann's" Table.]
>
> —JELLETT, pp. 1085, 1086.

The two Tables variously attributed to "Fleischmann" and to "Heischmann" are identical.

Did our space permit it, we could publish a number of other parallel passages of a like nature. Should any reader desire to compile them for himself he can do so by the aid of the following table:—

COMPARE BERKELEY												JELLETT.			
P.	28	line	26	to p.	29	line	20	with p.	227	line	12	to p.	228	line	13
,,	31	,,	18	,,	32	,,	23	,,	183	,,	17	,,	186	,,	10
,,	64	,,	6	,,	64	,,	15	,,	606	,,	13	,,	607	,,	28
,,	110	,,	23	,,	112	,,	11	,,	332	,,	16	,,	333	,,	29
,,	113	,,	9	,,	113	,,	27	,,	333	,,	30	,,	334	,,	7
,,	116	,,	13	,,	116	,,	22	,,	340	,,	37	,,	341	,,	3
,,	120	,,	33	,,	121	,,	17	,,	292	,,	48	,,	293	,,	7
,,	121	,,	20	,,	126	,,	20	,,	350	,,	8	,,	357	,,	6
,,	149	,,	17	,,	150	,,	4	,,	419	,,	4	,,	420	,,	46
,,	163	,,	11	,,	163	,,	28	,,	293	,,	33	,,	295	,,	12
,,	219	,,	1	,,	221	,,	12	,,	1084	,,	1	,,	1086	,,	22
,,	222	,,	1	,,	223	,,	27	,,	1082	,,	43	,,	1083	,,	23
,,	223	,,	28	,,	240	,,	12	,,	1086	,,	26	,,	1096	to	end

An interesting study is also afforded by comparing the tables on pages 27, 220, 233, 239, 240 in Berkeley with the tables on pages 240, 1086, 1095, 1091, 1092, respectively, in Jellett. The table, on page 27 in Berkeley and on page 240 in Jellett, is, so far as we know, to be found only in the pages of the two works which we are comparing with one another. The table on page 220 in Berkeley is by him attributed to Heischmann; that on page 1086 in Jellett by him to Fleischmann. Fleischmann's original table is given in grammes, and it is a striking tribute to the mathematical accuracy of the two writers that, on reducing to English weights the large number of grammes in this fairly comprehensive table, they have both obtained exactly the same decimal points of an English drachm. On the other hand, it is a striking testimony to the inaccuracy of the two writers that they have both made 3,500 grms. equal to 7 lbs 9 oz., whereas they are actually equal to 7 lbs. 11.459 oz.! The tables on page 233 in Berkeley and on page 1095 in Jellett are to all intents and purposes identical. Berkeley evidently regards his as original, as he does not give any reference to its source. Jellett says that his is "based on Holt's tables." The tables on pages 239 and 240 in Berkeley, and on pages 1091 and 1092 in Jellett, are also to all intents and purposes identical. Berkeley states that they are "by Holt," Jellett that they are "compiled from Holt's work on the subject." Reference to Holt's work has shown us that these three tables, in the form in which they appear in the books before us, do not appear in Holt's work on the Diseases of Children, but that all the information they contain appears there in a longer form. Apparently, therefore, both writers have condensed Holt's work in a similar manner.

As we have compared different parts of the text of these two works, we may now turn to the illustrations. Dr. Berkeley's work contains 58 illustrations. Of these eight are attributed to Farabeuf and one to Galabin. The remainder are unacknowledged, and are, presumably, therefore, original. Some nineteen of them appear to us to be identical with similar drawings in Jellett, and, as we are unable to reproduce them here, we suggest to our readers to compare Figs. 12, 13, 14, 15, 23, 24, 25, 30, 32, 40, 41, 42, 43, 44, 45, 46, 47, 49 in Berkeley with Figs. 104, 105, 106, 107, 175, 179, 182, 184, 185, 213, 214, 226, 227, 233, 238, 240, 236, 243 in Jellett. Many of these drawings represent the mechanism of labour, and in the preface to his book Jellett states that they were made from photographs taken especially for him by Dr. Arthur Ball.

In conclusion, we have only to say that Jellett's work was published in May, 1905, Berkeley's in June, 1906, and that, so far as a careful perusal of the preface and text of

Dr. Berkeley's book shows us, the only person, save Farabeuf and Galabin for illustrations, and Holt, Starr, "Heischmann," Vigier, Wright, and Planchon, for passages on infant feeding and management, to whom he confesses his indebtedness for anything, is Dr. Victor Bonney, who helped him "to revise the proof sheets." We make one omission. Dr. Berkeley also quotes a remark of Sir William Smyly, and notes its origin. The same remark in the same words also appears in the other work on midwifery to which we have referred.

RECENT WORKS ON ANATOMY.

1. *Text-book of Anatomy.* Edited by D. J. Cunningham, F.R.S., M.D. (Edin. et Dub.), D.Sc., LL.D. (Glasg. et St. And.), D.C.L. Oxon.: Professor of Anatomy, University of Edinburgh. Illustrated with 936 Wood Engravings from original drawings, mostly printed in colours. Second and thoroughly revised edition. Edinburgh and London: Young J. Pentland. 1906. 8vo. Pp. xxxvi + 1388.
2. *Manual of Anatomy, Systematic and Practical, including Embryology.* By Professor A. M. Buchanan, M.A., M.D., C.M., F.F.P.S. Glas. Vol. I. London: Baillière, Tindall & Cox. 1906. Demy 8vo. Pp. xvi + 596. (This book when completed will form an entirely new Text-book of Human Anatomy.)
3. *Atlas and Text-book of Human Anatomy.* By Dr. Johannes Sobotta. Edited by Playfair M'Murrich, A.M., Ph.D. Vol. I. Bones, Ligaments, Joints, and Muscles. Philadelphia and London: W. B. Saunders Company. 1906. 8vo. Pp. 258.

1. It is no small compliment to the authors of "Cunningham's Text-book of Anatomy," and especially to the learned editor, that a second edition should be called for within four years of the publication of the work. Well may the Editor speak of the reception given to the "Text-book of Anatomy," not only in this country

but also in America, as "gratifying." In the task of preparing this second edition no pains have been spared, and the whole book has been carefully revised. The sections in which the chief changes and additions have been made are those upon Embryology, the Joints, the Muscles, the Brain and Spinal Cord, the Genito-Urinary Organs, the Lymphatics and Applied Anatomy. These, and indeed all parts of the work, have been brought fully up to date. Notwithstanding the incorporation of much new matter in these and other sections it has been found possible, by judicious pruning, to keep the volume, as we think wisely, within reasonable limits as to size.

The revision of the various sections has been left in the hands of the several authors who had written them for the first edition, with one notable and melancholy exception - ere he was able, as it were, to enjoy the first fruits of his grateful task the pen had fallen for ever from the lifeless hand of Ambrose Birmingham. Although at the time in very bad health, Professor Birmingham was desirous to undertake his share of the work, and he had the sheets on the Digestive System in his possession for this purpose when he died. With admirable taste the Editor, who undertook the revision of this section, has left it almost unchanged, and has preserved throughout the original character of the article.

There are many new illustrations, and we observe that colour has been much more freely used both in the new and in the old figures than in the former edition. This is of great advantage to the medical student, who is thereby enabled to appreciate anatomical points which would otherwise escape his notice. With the exception of the figures which have been added to the sections dealing with Embryology, Osteology, and the Genito-Urinary Organs, the new illustrations have been prepared in the Anatomical Department of the University of Edinburgh. They owe much to the artistic skill of Mr. James T. Murray, of Edinburgh. Special attention should be drawn to the excellent figures which have been introduced to show the attachments of the muscles to the various bones. These figures replace old outlines, many of which showed inaccuracies. For the preparation of the specimens on which these new figures are based, and for assistance in mapping out of the areas of muscle attachment, the editor expresses his acknowledgments to Dr. E. B. Jamieson.

Further, it is to be noted that, whereas the old figures were for the most part wood engravings, the new illustrations are successful process blocks.

We have written enough to convey to our readers that in "Cunningham's Text-book of Anatomy" they will find a comprehensive and reliable guide to the anatomy of the human body.

2. THE first volume of Professor Buchanan's manual deals with osteology and the regional anatomy of the upper and lower limbs. The work begins with a very readable detailed description of the entire human skeleton, including an account of its ossification. Next the anatomy of the upper and lower limbs is described, the various structures being dealt with in the order in which they are met with in the ordinary course of dissection. At the end of the description of the anatomy of each limb a "guide," containing instructions for exposing and demonstrating the various structures, is printed in smaller type.

The work is excellently illustrated with many striking figures, for the most part drawn by Mr. James Murray, who has already achieved so wide a reputation for anatomical illustrations. Many of the figures have the advantage of being printed in colours. In the sections dealing with the viscera and organs of the body, which will form a part of Volume II., it is proposed to include drawings from microscopical preparations and short accounts of development.

Professor Buchanan's book is one which will undoubtedly appeal to students on account of the systematic arrangement of its contents and its attractive appearance. It contains ample information for students preparing for pass examinations. We look forward with pleasure to the publication of the second volume.

3. English-speaking students are indebted to Professor M'Murrich for making this beautiful Atlas accessible to them in their own language. The main object of the work is to assist medical students in acquiring an accurate knowledge of normal human anatomy, and hence the various structures and parts of the body are illustrated from the points of view from which they are more usually seen, and no marked anomalies are included. In this way the Atlas and text differ from some of the more elaborate atlases published within recent years. Dr. Sobotta's work is essentially a students' book. It would be difficult to speak too highly of the beautiful illustrations of the dried portions of the skeleton—some of these are, indeed, beyond all praise. The plates concerned with the joints and ligaments are also exceedingly beautiful. The plates illustrating the anatomy of the muscles are reproduced by colour lithography, and are less striking and attractive; still they give most useful and excellent views of the various muscles of the trunk and limbs.

In publishing the text and plates together, and not, as in the German edition, in separate volumes, the usefulness of the work has been increased, and Professor M'Murrich has also, we believe, done well in giving the English equivalents rather than the actual names adopted by the Basel Nomenclature Committee.

The Development of Modern Medical Education. By Alfred Stengel, M.D. From the University of Pennsylvania Medical Bulletin, November, 1905. 8vo. Pp. 21.

The perennial problem of the education of our immediate successors in the racing battle of life is always with us; and, indeed, it has seldom occupied so prominent a position in the (British) "public eye" as it does at the present moment. (In our adoption of the elastic term "moment," we mean it to connote a period of some few months immediately preceding the instant of our writing.) General education, special education, technical education, and professional education are branches of the great trunk whose shadows are so arranged as to intercept some of the light which illuminates every household at some period in the history of the latter. Many and various, indeed, are the opinions which have been advanced regarding the functions and possibilities of the educational process; and a very interesting study is offered to the physiologist and psychologist, as well as to the general politician, the philosopher, and the philanthropist—to say nothing of the ubiquitous *paterfamilias*—in a comparison of the records of the impressions which knowledge and experience have made on some of the greatest intellects in connection with the investigation of these subjects. England's greatest philosopher agrees with Italy's greatest politician that: "There is no trusting to the force of Nature, nor to the bravery of words, except it be corroborated by custom." England's greatest historian has transmitted to posterity the opinion that: "The power of instruction is seldom of much efficacy except in those happy dispositions where it is almost superfluous." The philosophic apostle of utilitarianism, on the other hand, held the widely divergent view that: "The power of education is almost boundless—there is not one natural inclination which it is not strong enough to coerce, and, if needful, to destroy by disuse. In the greatest recorded victory which education has ever achieved over a whole host of natural inclinations in an entire people—the maintenance through centuries of the institutions of Lycurgus—it was very little, if even at all, indebted to religion." The early contemporary of our latter authority, the leader of the poetic bevy of "Lakers," expressed to Emerson, when the latter was engaged in his pursuit of "English traits," his opinion that: "Society is being enlightened by a superficial tuition, out of all proportion to its being restrained by moral culture. Schools do no good. Tuition is not education." He also, we are informed, thought "more of the education of circumstances than of tuition." Few readers, we think, will dispute the soundness of the view of the great pioneer of modern English lexicography on this subject: "Every person has two educations: one, which he receives from others; and one, more important, which he gives himself." The metrical opinions are, so far as we have had an opportunity of collating and comparing the same, somewhat less contradictory than those of the prosaic philosophers. The poetic hero of Twickenham has it that:

"'Tis education forms the common mind:
Just as the twig is bent the tree's inclined."

Edmund Waller states that:

"'Tis art and learning that drew forth
The hidden seeds of native worth."

And the verses of the greatest of the Latin lyrists may perhaps form as suggestive texts for homilies on the subject of education as anything that has been written on this pregnant topic ever since the days of the first Roman Emperor:

"Doctrina sed vim promovet insitam,
Rectique cultus pectora roborant:
Utcunque defecere mores,
Indecorant bene nata culpæ."

"Nemo adeo ferus est, ut non mitescere possit,
Si modo culturæ patientem commodet aurem."

The methods of education were, inevitably, as various as the opinions regarding the range and efficacy of the process. We have been told of the North American Indians that: "While their male children are young they lay them on the skins of panthers, that they may thereby acquire the strength, cunning, and agility of that animal; their females they lay on the skins of fawns and other wild animals, that, like them, they may become soft, gentle, and engaging." The model community of Houyhnhnms held that "*temperance, industry, exercise, and cleanliness* are the lessons equally enjoined to the young ones of both sexes; and my master thought it monstrous in us to give the females a different kind of education from the males, except in some articles of domestic management; whereby, as he truly observed, one half of our natives were good for nothing but bringing children into the world; and to trust the care of our children to such useless animals, he said, was yet a greater instance of brutality." We sometimes wonder what would be the comment of Lemuel Gulliver if he were allowed to revisit the Britain of the author of "The Five Talents of Woman," whose record of this feature of the social life of the latter part of the past century informs the reader that:—"A school-girl says that her studies are arithmetic, algebra, geography, astronomy, grammar, English history, general history, etymology, spelling, composition, drawing, reading, writing, and singing by note." Commenting on this, the writer says ironically: "It looks as if her education were being sadly neglected. Unless French, Latin, mental philosophy, civil engineering, and hydrostatics are added to her studies she will be totally unable to assume the duties of a wife and mother a few years hence." And what shall we say regarding the progressive evolution of medical education during the past quarter of a century (!!)? It can hardly be very profitable to begin a complete answer to this question, for the (minimum) quinquennial period of our present professional curriculum would probably turn out to be all too short to arrive at the end of the discussion.

Dr. Stengel's style and diction present the delightful crystalline clearness of thought, and unmistakeable precision of meaning, that so brilliantly characterise the higher-class productions of trans-Atlantic English literature in our own generation. In this it has decidedly outstripped the corresponding manufactures of the other countries; and perhaps approaches more nearly than any other scientific literature now in course of evolution the crystalline translucency of that of our Gallic neighbours. He gives us an eminently philosophical birds'-eye view of the genesis and growth of "modern medical education." We are cheered by the obviously optimistic outlook which is very evidently present to his mind's eye, and feel all the more grateful as we so often feel the depressing effect of a large proportion of our personal experience. He opens his address with a reference to Wolsey's contributions to the architecture of Oxford; but, whether by accident or design, makes no allusion to the interesting historic (and biographical) fact that the proud prelate, by whom the lion-hearted Tudor monarch so long allowed himself to be tamely led, obtained the needful resources for his Oxford donation by "looting" a couple of small monasteries, whose existence he considered without any foreshadowing malice to his Church—to be entirely dispensable; and thereby unwittingly indicated to his royal master the most concentrated source of England's treasures, which were afterwards so ruthlessly appropriated by England's "Royal Bluebeard." From this date of the dawn of modern progress our lecturer carries us forwards—instructively and cheerily. And we will just take the liberty, before joining him on his journey, to indicate to our own readers the special claims which the *premier* English University holds on the patriotic Irishman who happens to take an intelligent interest in the origin of modern educational institutions. It is one on which the Anglo-Saxon historian is seldom—if ever found to dwell at length. When England's Alfred was called to govern the barbarous inhabitants of that then distracted kingdom, Ireland had for several centuries been the most learned country of Christendom, while the larger neighbouring island was one of the least civilised. When the most inspired of Albion's monarchs was raised to the uneasy position of its anointed ruler, he saw that the future elevation of his people depended on their mental culture. And his action was prophetically similar to that of the truly patriotic—even if terribly ruthless—Peter, who laid the earliest solid foundation of the (now so uneasy) Russian Empire. Alfred the Great came over to Ireland to be educated himself (how well he profited by his sojourn the quality of his own writings furnishes ample proof to posterity!), and he imported an Irishman who founded the University of Oxford. England does not often boast of this fact; it is none the less our duty not to allow her or ourselves to forget it!

Professor Stengel refers to the profligacy and levity of the first half of the eighteenth century; to the respective influences of "the skeptical and cynical genius of Voltaire," "the superficialities and artificialities of

Pope," "the brilliancy of Addison and the genius of Swift," "the scholarship of Bentley and the philosophy of Bishop Berkeley." It is impossible to discuss within the limits of a review the innumerable thoughts suggested and questions raised, in the perusal of this brilliantly-written and inspiringly-philosophical address; which worthily concludes with the advice to its hearers to "leave these halls as men of uprightness and honour, to whom the community may look with confidence, and entrust its welfare with security." While warmly recommending it to our readers' attention, we cordially thank the author for the pleasure he has given ourselves in its perusal.

The Ship-Surgeon's Handbook. By A. VAVASOUR ELDER, M.R.C.S., L.R.C.P.; Surgeon, Orient Steam Navigation Co.; late Surgeon, British India Steam Navigation Co. London: Baillière, Tindall & Cox. 1906. Pp. 167.

WHEN the student has blossomed into a doctor at the conclusion of his final examinations he is confronted with the difficulty of deciding what he is going to do with himself. Far fields look fair, and, with the idea of seeing the world before settling down, perchance he decides to "take a ship." Armed with introductions, and buoyed up with a self-confidence born of inexperience, he goes to Liverpool or London with a hazy idea that a ship-surgeoncy is more or less of a sinecure. After a period, during which he wearily pervades shipping offices, he is at length appointed to a vessel and "signs on." His difficulties now begin, and circumstances constantly arise in which tact and *savoir faire* are everything and text-book knowledge is of little service.

The book before us has been written by one who has been through the mill and learnt in the school of experience. Devoid of literary pretensions, it is full of hints which are enlivened by the ready wit of the author. It is an excellent book, and we should like it to be in the hands of every young medical man who purposes going to sea, for assuredly the perusal of it will save him from some of the pitfalls which will surround him, and aid him in many an emergency.

PART III.

SPECIAL REPORTS.

REPORT ON MEDICINE.

By T. **Gillman Moorhead**, M.D. Dub., F.R.C.P.I.; Physician to the Royal City of Dublin Hospital.

MICROBIC CYANOSIS.

Gibson and Douglas describe a most interesting case under the above heading. The patient, a married woman, aged thirty-six, had suffered for years from headaches, weakness, and giddinesss, and had undergone a gradual change of colour. The tint of the skin had slowly assumed a cyanotic hue; the face and hands were lavender colour, and the lips, ears, and nails were as dark as bilberries. She had also suffered for some time from diarrhœa and general gastric disturbance. The blood and urine were practically normal, and there was not enough in the heart or other organs to account for her symptoms. At first it was suggested that she might be suffering from blood destruction caused by the use of coal-tar derivatives, since she had been accustomed to use phenacetin to relieve her headaches, but an almost complete withdrawal of drugs did not result in any change. Later it was suggested that her condition might arise from intestinal toxæmia, and resulting methæmoglobinæmia. In consequence the blood was carefully examined, and the presence of methæmoglobin and of nitrites was at once detected. The saliva also contained traces of nitrites, but none could be found in the fæces. A bacteriological examination of the blood then showed the presence of colon-like organisms, which were grown on agar, and showed most of the cultural characteristics of the *B. coli communis*. The author's present reading of the case is as follows: -The original source of the mischief was the bowel; from there a systemic infection has taken place. The organisms present are constantly producing nitrites in the blood, and these nitrites, acting on the hæmoglobin, produce methæmoglobin, which in turn gives rise to the cyanotic appearance. No definite therapeutic agents of value have as yet been found for the condition, but a course of intestinal antisepsis has been started in the hope of bringing about some improvement. - *Lancet*, July 14, 1906.

ORTHO-DIAGRAPHY.

Dr. Paul Franze describes the technic of this method of examining the outlines of the heart by X-rays in the June number of *Medical Electrology and Radiology.* He points out that no information of any value concerning the size of the heart can be obtained by ordinary X-ray examinations owing to the divergence of the rays and consequent enlargement of shadows. Of all the rays emanating from the anti-cathode there is necessarily one beam which is perpendicular to the plane of projection. If it were possible to select this one ray and to conduct it round the circumference of the heart, and if it were also possible at any given moment to mark the shadow projected by this ray alone, it is clear that one could thus obtain an accurate reproduction of the size of the organ throwing the shadow. The ortho-diagraph is an instrument devised to enable one to carry out the above, and by its aid much valuable information concerning not only the size of the heart as a whole, but also its individual chambers, can be obtained. Already a table of averages for normal individuals has been plotted out, and it has also been shown that variations occur in normal individuals with the phase of respiration and with the general position of the body.

SINGLE-DAY PNEUMONIA.

Bechbold writes on an abortive variety of pneumonia, which he terms "single-day pneumonia," and which he says never lasts more than twenty-four hours. The cases are by no means rare, and probably the larger number of cases of so-called "ephemeral fever" are really examples of the disease he describes. He gives the protocols of ten typical cases from Leube's clinic. In all of these there was the initial rigor, the high fever, and a critical outburst of sweat accompanying a definite temperature crisis. Only in two cases was pain in the side absent. Percussion phenomena were very variable, and so also were the auscultatory signs. Most frequently fine crepitus was heard. In two cases there was definite bronchial breathing, occasionally a pleuritic rub, and at times weakened vesicular breath sounds. The sputum was not characteristic. The short duration of the sickness he regards as due either to unusual resisting power on the part of the individual attacked or to lessened virulence of the pneumococci. --*Münch. med. Woch.*, 1905, No. 44.

THE TREATMENT OF PSORIASIS WITH ELECTRIC LIGHT BATHS.

Meschtscherski considers this method of treatment and discusses the special indications for its use. The method of treatment is not new, but hitherto there has been no knowledge as to what were suitable and what unsuitable cases. In the writer's investigations he kept the temperature of his baths for the most part between 50° to 65° R., and after the bath gave a cold douche. The conclusions arrived at were as follow:--(1) Electric baths play a most important *rôle* in the treatment of psoriasis, but are not equally good for all varieties of the disease. (2) The best varieties for treatment are those of very long standing. (3) Atonic psoriasis with slightly-marked hyperæmia and infiltration is only very slowly affected favourably. (4) These forms in which there is an abundant serous exudation, as in psoriasis rubra and psoriasis fibrinosa, react only very slowly. (5) Light treatment is contra-indicated when an acute exacerbation is present. (6) A high temperature is unnecessary, as the curative affect is almost entirely the result of the light itself. (7) The concomitant use of local or general therapy usually accelerates the cure.--*Medicinskoje Obosrenije*, 1906. Bd. LXV.

PARAVERTEBRAL DULNESS IN PLEURAL EXUDATES.

Gratschoff describes the result of his investigations into the existence of a paravertebral triangle of dulness on the healthy side, in cases of pleural effusion on the sound side. He describes the triangle as having a horizontal base from 1 to 2½ inches in length, and being bounded laterally by a line drawn from the upper level of the effusion to the outer point of the base. It varies in size according to the quantity of effused fluid, and is as a rule better marked in cases of right-sided effusion. It first makes its appearance when the exudation reaches to the eighth or ninth dorsal spine. Auscultation over the region of dulness, and also the result of *post-mortem* examinations, shows that the underlying lung is in a healthy condition. The dulness is present both in serous and purulent exudations, and disappears when the exudate is evacuated. It has been contended that the triangle might serve as an important sign in differential diagnosis, but this has been denied by others who have noted its presence in cases of undoubted pneumonia. Gratschoff has studied this point, and has come to the conclusion that the dulness is more constantly present in cases of pleurisy, and that when present in pneumonia it is not triangular but quadrilateral in shape. Furthermore, in cases of pleurisy percussion of the vertebral spines yields a dull note, whereas in cases of pneumonia no dulness is obtained in this way.—*Kasanski med. Journal*, 1905. Bd. 5.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY HYPERÆMIA.

Leo, of Bonn, discusses this method of treatment at length in the *Berliner klinische Wochenschrift* for July 2nd, 1906. He draws attention to the fact that the antagonism between passive hyperæmic states and tuberculosis has long been recognised, and that as early as 1838 Rokitansky contrasted the frequent occurrence of phthisis in cases of pulmonary stenosis with its comparative rarity in cases of mitral disease. To Bier is due the credit of recognising the possibility of utilising passive hyperæmia as a remedial agent, but for long there was great difficulty in applying his methods to cases of pulmonary disease. Many attempts were made to overcome the difficulty, such as keeping the thorax in a continuous bath of warm water, inhalation of heated air, inhalation of irritating substances, various suction apparatuses, &c., but most of these were found impracticable, and, moreover, erred in producing an injurious active hyperæmia instead of the desired venous stagnation. It was at last suggested that the wished-for result might be obtained by postural methods, designed to make the thorax the lowest part of the body, and to raise the head and extremities. In cases of unilateral tuberculosis the diseased lung of course is made to take the lower part. Leo has now treated thirty patients by his postural method, and, on the whole, with good results. In some, slight hæmoptysis took place and necessitated an interruption of the treatment for some time, but it was later resumed. He has now convinced himself, both on theoretical grounds and also as a result of his experience, that the method is of value, and he intends to continue its use.

CASE OF CURED LYMPHO-SARCOMA.

Ewald describes a case of a man, aged fifty-seven, who came under treatment for glandular swellings beneath the lower jaws, the swellings were bilateral, and were rapidly enlarging, and causing considerable respiratory distress through pressure. The tonsils also were much enlarged, and on being removed revealed the typical histological structure of a lympho-sarcoma. The patient was now handed over to an X-rayist, and received in all 120 exposures. When first seen the spleen was enlarged, but the axillary and groin glands were normal. The blood showed nothing unusual. About the sixth week of treatment the tonsillar and glandular enlargements began to decrease in size, and the blood became richer in hæmoglobin. Later on the inguinal glands enlarged, but rapidly diminished again after a few exposures to the rays, and the patient was dismissed as cured at the end of 1905. Unfortunately, this favourable result did not continue, and the patient was re-admitted three months later with enlarged axillary glands, and with laryngeal tumours. The patient was also extremely cachectic, and the red cells were only 2½ million per c.m. He was now put upon arsenic, which was gradually increased until 75 drops were being taken daily, and under this he showed a most rapid improvement, so that in two months the various enlargements had almost completely disappeared, the cachectic look was gone, and there had been a considerable gain in weight. Whether the improvement will remain permanent or not is, of course, a question for the future.- *Berliner med. Woch.* 1906. No. 27. P. 909.

VERTIGO.

Dr. Dutt describes and illustrates the most common conditions in which vertigo is found as an important and troublesome symptom. In most accounts of the condition only labyrinthine vertigo is described, and hence the general tendency to think at once of the internal ear when the symptom is complained of. Dr. Dutt adopts the following clinical classification :-- (1) Central (direct or indirect). (2) Gastric (or visceral). (3) Vascular (4) Toxic. (5) Labyrinthine. Under direct central he includes the vertigo complained of by persons suffering from epilepsy and from organic intracranial disease, while his indirect central group includes nasal and ocular vertigo. Gastric vertigo can arise either reflexly through irritation of the vagus in the stomach, by direct pressure on the heart from gaseous distention, or by ptomaïn poisoning. The symptom is very common, and is best treated by gastric sedatives and by attention to diet. Vascular vertigo is produced either by excessive or by deficient supply of blood to the brain. It is a most important symptom of senile arterio-sclerosis, and can then be only dealt with by remedies that lower the blood pressure. The toxic variety includes such diverse conditions as the giddiness in acute fevers, in anæmia, that resulting from overuse of tea, from quinine, and from many other drugs. In every variety the diagnosis of the cause can be made only by most careful inquiry and examination and by gradual exclusion.—*Treatment.* Vol. X. No. 4. June, 1906.

HÆMOPHILIA.

When some blood is withdrawn from a hæmophiliac and observed *in vitro* it is found that almost immediately the blood corpuscles sink to the bottom, while the plasma remains floating on the top. After twenty-five minutes coagulation commences in the plasma, and is complete in about an hour and a quarter. The blood clot then contracts, but more slowly than in normal blood, and serum is exuded. Weil has mixed hæmophiliac serum with the blood of normal individuals, and has found that it has not in any way interfered with normal coagulation. He has also added normal serum to hæmophiliac blood and has found that coagulation was at once accelerated so that the red cells no longer fell to the bottom, and that contraction took place even quicker than normal. From this he concludes that the coagulation peculiarities are due to the absence of some substance, probably a ferment. He found, moreover, that animal serum had the same effect as human serum. From this he conceived the idea of injecting hæmophiliacs with animal serum, and found that when from 10 to 15 c.cm. of bullock serum were injected subcutaneously bleeding occurred less readily and ceased more easily. The effect, however, wore off in a few weeks. One patient had a tooth extracted twenty-five days after an injection, and did not bleed more than a normal person.—*Weil—Sérotherapie de l'hémophile—Compt. Rend.* Tome 51. P. 667.

PYURIA FROM LEUCOCYTOSIS.

Talma contends that in certain cases it is possible for pus to be actually formed within the blood, and for such pus to stream out of the vascular system and form abscesses scattered through the body or else give rise to such a symptom as pyuria, or pus in the fæces, without any local suppurative condition of the genito-urinary or alimentary tracts being present. In support of his contention he quotes the following cases:- (1) A man, aged fifty-nine, was under treatment for some time for chronic pulmonary tuberculosis. During this period his urine was practically normal. He suddenly developed an acute inflammation of the whole of his right lung, and became seriously ill. A leucocytosis of 17,000 per c.m. was present, and abundant pus appeared in the urine, without any local signs of cystitis or urethritis. The patient died, and at the autopsy no suppurative lesion of the genito-urinary tract was found. (2) A man, aged thirty-four, came under observation with symptoms suggesting acute rheumatism. These gradually altered, and soon presented the typical feature of an acute pyæmia. Among other symptoms the urine was loaded with pus, and the fæces contained enormous numbers of white cells. There was present a leucocytosis of 43,000. At the autopsy the cause of the pyæmia was regarded to be a small pleural abscess, but no suppurative lesion of the alimentary tract or of the genito-urinary tract was present. The writer regards these cases as proving his contention, and discusses the question of increased permeability of mucous membranes to leucocytes during the existence of a febrile leucocytosis.—*Berliner klin. Woch.* May 28th, 1906. P. 705.

LITERARY NOTE.

"RACE CULTURE; OR, RACE SUICIDE?" is the title of a work by Dr. Robert R. Rentoul (Liverpool) which the Walter Scott Publishing Co., Ltd., London and New York, are issuing in October. The author states that the work is "a plea for the unborn," and the giving of more attention to the begetting of a healthy race. It is written for medical and non-medical thinkers; and the causes of degeneracy are discussed in twenty-one chapters, while suggestions are made for the prevention of an increase of degeneracy.

PART IV.

MEDICAL MISCELLANY.

◆

Reports, Transactions, and Scientific Intelligence.

◆

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1906-1907.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for a University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery. Under the Regulations of the School of Physic in Ireland (*vide infrà*, page 292), considerable Professional Privileges are afforded to medical students in regard to the Arts Curriculum of the University of Dublin.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of His Majesty's Privy Council.

The Royal Colleges of Physicians and Surgeons are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines, if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital, in the wards of which he will receive excellent bedside teaching and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(*a.*) The period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years. For the purpose of this requirement the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration.

(*b.*) In every course of Professional study and Examinations, the following subjects must be contained:—

(I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the Rudiments of Heat, Light, and Electricity.
(II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
(III.) Elementary Biology.
(IV.) Anatomy.
(V.) Physiology.
(VI.) Materia Medica and Pharmacy.
(VII.) Pathology.
(VIII.) Therapeutics.
(IX.) Medicine, including Medical Anatomy and Clinical Medicine.
(X.) Surgery, including Surgical Anatomy and Clinical Surgery.
(XI.) Midwifery, including Diseases peculiar to Women and to New-born Children.
(XII.) Theory and Practice of Vaccination.
(XIII.) Forensic Medicine.
(XIV.) Hygiene.
(XV.) Mental Disease.

The first four of the five years of Medical Study must be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution, recognised by any of the Licensing Bodies and approved by the Council, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

A graduate in Arts or Science of any University recognised by the General Medical Council, who has spent a year in the study of Physics, Chemistry and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study, provided that he has registered as a medical student with the General Medical Council.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or Foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities, and that no Qualification in Medicine ought to be granted without evidence of Clinical Instruction in Infectious Diseases.

I.

UNIVERSITY OF DUBLIN.

The Medical School of the University of Dublin has for its official title the name of The School of Physic in Ireland. It is officered by University Professors and Examiners and by four King's Professors appointed by the President and Fellows of the Royal College of Physicians of Ireland, acting as Trustees of the Estate of Sir Patrick Dun.

MATRICULATION.

Students cannot be permitted to attend any of the Courses of Instruction in the School of Physic in Ireland until they have Matriculated. There is no special Examination; the Public Entrance Examination of Trinity College, or any other of the Preliminary Examinations recognised by the General Medical Council, being accepted as equivalent. The Matriculation Fee is Five Shillings. It is not necessary for Students to have their names on the College Books, or to attend any of the Academical duties of the University, unconnected with the School of Physic, unless they desire to obtain a Diploma or Degree in Medicine, Surgery, and Midwifery. Students may matriculate at the commencement of either the Winter or the Summer Session. The 25th of November is the last day of admission to the Winter Session. In the Summer Session the day varies a good deal according to the time at which Easter occurs, and the Courses of Lectures for which the Student proposes to enter.

WOMEN STUDENTS.

Women Students are now admitted to the Degrees and Diplomas in Medicine, Surgery, and Midwifery, on the same conditions as men. A special Anatomical Department, with separate entrance, dissecting-room, and reading-room, has been erected by the Board of Trinity College for their accommodation.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY; AND IN DENTISTRY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery, and in Dentistry, granted by the University are as follow.

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.
7. Master in Dental Science.[a]

The Diplomas are:—

1. Diploma in Public Health (formerly Qualification in State Medicine).
2. Diploma in Medicine.
3. Diploma in Surgery.
4. Diploma in Obstetric Science.
5. Licence in Dental Science.[a]

REGULATIONS FOR OBTAINING THE DEGREES OF M.B., B.CH., AND B.A.O.

I. *Arts Course.*—Before they can join the Medical School Students must pass (*a*) a Junior Freshman Term Examination, or (*b*) a Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination, with the exception of Trigonometry. They obtain credit for the Final Freshman Examination by attending Arts Lectures in Mechanics—including the necessary amount of Trigonometry—English Composition and Logics in the Trinity Terms of the Junior and Senior Freshman years, passing the Preliminary Scientific Examination in full, and an Examination in Mechanics, Logics, English Composition, and *one* language,

[a] See page 315.

viz.—French, German, Latin, or Greek. The Examination in Mechanics may be taken at the Ordinary Final Freshman or at a special Examination to be held at the date of the Preliminary Scientific in Physics and Chemistry.

They obtain credit for B.A. thus:—

(*a*) They attend Courses of Lectures in Astronomy and in Ethics in the Trinity Terms of the Junior and Senior Sophister years, respectively, and write a composition on some subject connected with the Course on one lecture-day in each week.

(*b*) At the conclusion of the Astronomy Lectures they pass an Examination held by the Lecturers.

(*c*) They produce evidence of satisfactory progress in the Medical Studies of their third and fourth years (see p. 297; Class Examinations).

(*d*) They pass at the B.A. Examination in the Ethics Course (*a*, above) and in English Composition, and Part II. of the Intermediate Medical Examination.

II. *Medical Course.*—They produce evidence of having passed the Special Preliminary Examination, or its equivalent (see above), pay a Matriculation fee of 5s., and proceed with the following Courses and Examinations:—

FIRST YEAR—

First Winter[*]—

Chemistry Lectures	£2 2 0
Physics and Mechanics Lectures	—
Practical Physics	not arranged
Systematic Anatomy Lectures	3 3 0
Descriptive Anatomy Lectures	3 3 0
Dissections	5 5 0
	£13 13 0+x

First Summer—

Botany	£1 11 6
Practical Botany	not arranged
Zoology	1 11 6
Practical Zoology	not arranged
Practical Chemistry	3 3 0
	£6 6 0+x

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[*] In the Table of Fees here given certain specified Reductions have already been made.

PRELIMINARY SCIENTIFIC.

The subjects are—(*a*) Chemistry and Physics, and (*b*) Zoology and Botany. All the subjects may be passed at the same time, or they may be passed in two groups (*a*) and (*b*).

Before presenting themselves for this Examination, Students must have attended the recognised Courses of Instruction in the subjects of the Examination.

SECOND YEAR—

Second Winter—

	£	s.	d.
Anatomy Lectures	£3	3	0
Physiology Lectures	3	3	0
Physiology (Practical)	2	2	0
Dissections	5	5	0
Hospital Elementary Instruction[a] ..	12	12	0
	£26	5	0

Second Summer—

Histology	5	5	0

INTERMEDIATE MEDICAL, PART I.

The subjects are—Anatomy, Histology, and Physiology (omitting the Physiology of the Sense-Organs, and of the Central Nervous System). Both subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the Courses of Instruction prescribed for the First and Second years of Medical study, and *must have completed the Preliminary Scientific Examination.*

The Examination will consist of a paper, a practical, and an oral in each subject.

THIRD YEAR—

Third Winter[b] —

Applied Anatomy Lectures ..	£3	3	0
Physiology Lectures	3	3	0
Applied Physiology	not arranged		
Surgery	2	2	0
Hospital Practice	12	12	0
	£21	0	0+x

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[a] Hospital attendance cannot be commenced until the student has obtained credit for six months' dissections.

[b] Students who have credit for two years' dissections in Trinity College

INTERMEDIATE MEDICAL, PART II.

The subjects are—Applied Anatomy and Applied Physiology (including the Physiology of the Nervous System and of the Sense-Organs). Both subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the prescribed Courses of study, and *have completed Part I. of the Examination.*

The Examination will consist of a paper and an oral in each subject, together with a Practical Examination in Applied Physiology.

Third Summer—			
*Materia Medica and Therapeutics ..	£3	3	0
Operative Surgery[a]	2	12	6
	£5	15	6

N.B.—The Courses of the Fourth Year cannot be commenced until Part II. of the Intermediate Examination has been completed.

FOURTH YEAR—

Fourth Winter—			
Practice of Medicine	£3	3	0
Midwifery	3	3	0
Pathology[b]	2	2	0
Hospital Practice	12	12	0
	£21	0	0
Fourth Summer—			
Medical Jurisprudence and Hygiene..	£3	3	0
Practical Pathology	2	2	0
	£5	5	0

FINAL MEDICAL, PART I.

The subjects are—Pathology; Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene. All the subjects must be passed at the same time.

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will be allowed to dissect in their third or subsequent year on payment of £3 3s. for the Winter Session.

[a] Operative Surgery may be taken by those Students only who have completed Part II. of the Intermediate Examination.

[b] Freshman Students pay £3 3s.

Before they are admitted to the Examination, Students must have attended the prescribed Courses of study, and paid the *Liceat* Fee (£5).

Vaccination (Fee, £1 1s.) should be taken out in the fourth year.

FIFTH YEAR—

Practical Midwifery	£10	10	0
Mental Disease	3	3	0
Ophthalmic Surgery	3	3	0
	£16	16	0

FINAL MEDICAL, PART II.

The subjects are—(*a*) Medicine, Clinical Medicine, and Mental Disease; (*b*) Surgery, Clinical Surgery, Surgical Operations, and Ophthalmic Surgery; (*c*) Midwifery and Gynæcology.

Students may present themselves for Examination in any of these groups (*a*), (*b*) or (*c*), separately, or together, at either of the Examinations during their Fifth Year; but they must leave at least one of these groups until the end of their Fifth Year. Before presenting themselves for any of these Groups, Students must have attended all the prescribed Courses of Instruction in the subject in which they present themselves for Examination, and paid the *Liceat* Fee (£5).

TOTAL EXPENSES OF FOREGOING COURSES.

I. Lectures	£67	4	0
II. Hospitals	55	13	0
III. Degrees (B.A.O, B.Ch., M.B.) ..	27	0	0
TOTAL ..	£149	17	0+*x*

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Degrees, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, or to pass the Previous Medical Examination in these subjects.

Diplomates on completing the Course in Arts, and proceeding to the Degree of B.A. may become Bachelors, by attending the Lectures on Botany and Zoology, passing the Preliminary Scientific Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Finals.

Candidates who have completed the prescribed Courses of study and passed all the Examinations will be entitled, if Graduates in Arts, to have conferred on them the Degrees of M.B., B.Ch., B.A.O., on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. They will also obtain from the Senior Proctor a Diploma entitling them to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

RE-EXAMINATION.

Every Student, who having entered for any of the Medical Examinations, fails, for any reason, to obtain credit for it, shall pay a fee of 10s. 6d., for any occasion on which he offers himself again for the same Examination.

CLASS EXAMINATIONS.

Students will be required to show a reasonable knowledge, as ascertained by Examination during the Session, of the subject of a Course of Lectures before a certificate of satisfactory attendance is issued by the Professor in charge, and the return to the Senior Lecturer is to include a statement that this course has been fulfilled.

Dates of Examinations for 1906–1907.

Preliminary Scientific begins—October 15; March 11; June 20.

Intermediate Medical, Part I., begins—October 15; March 11; June 24.

Intermediate Medical, Part II., begins—October 22; March 18; June 17.

Final Medical, Part I., begins—October 22; June 24.

Final Medical, Part II., begins—November 12 (Supp.); March 4; June 10.

Notice of intention to enter must be given to the Registrar of the School *not less than eight clear days before* each Examination begins. Printed forms of notice are provided. Certificates, when required, and *Liceat* fees, when due, are to be presented or paid when Students enter their names for the Examination.

ATTENDANCE ON LECTURES.

Students are expected to attend all the Lectures or Demonstrations delivered in each Course for which they enter, whether in the Winter or the Summer Session; but in order to provide for unavoidable absence, such as illness or attendance at Examinations, they are allowed credit for a Course if they have been present at three-fourths of the Lectures or Demonstrations actually delivered. If this proportion involve a fraction, the next highest whole number is reckoned as the minimum. If more than one-fourth have been missed, application must be made through the Committee of the School of Physic to the Board of Trinity College, by whom each case is decided on its merits, but the applicant must produce satisfactory reasons for omission of *all* the Lectures missed, not of the excess above one-fourth only. No Student will be allowed credit for a Course who has not been found diligent in attendance, when not prevented by illness or other cause considered sufficient by the Board.

HOSPITAL ATTENDANCE.

Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College are required.

During the first three months of the Winter Session in which he begins his Hospital work, the Student must attend an Elementary Course of Hospital Instruction for one hour per day.

This certificate must be signed by all the Teachers who have taken part in the Instruction, and the attendances of each day must be entered in a book supplied by the Board of Trinity College, and initialled by the teachers for that day.

During other years also a record of attendance at Hospital is required by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

PRACTICAL VACCINATION.[a]

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville Street; at No. 1 East Dispensary, 11 Emerald Street; or, until further notice, at the Grand Canal Street Dispensary.

MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

PRACTICAL MIDWIFERY.

A Certificate of attendanee on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

DIPLOMA IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge, or a Doctor in Medicine of London University.

2. The name of the Candidate must have been on the Medical Register at least twelve months before admission to any part of the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health,[a] of which at least three months shall be distinct and separate from the period of Laboratory Instruction.

[a] The Local Government Board for Ireland require that, on and after May 1st, 1906, Medical Officers of Dispensary Districts must have attended a six weeks' course of instruction in vaccination with six attendances, four being in consecutive weeks, must have passed an examination, and must show practical knowledge in performing Vaccination. The L. G. B. recognises only the certificates issued by the Medical Officers of the Vaccine Department, Upper Sackville Street, Dublin, the Workhouse Infirmary, Cork, the Workhouse Infirmary, Belfast, and the Workhouse Infirmary, Galway.

4. The Candidate must, after obtaining a registrable Qualification, have attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of Methods of Administration.[a]

NOTE 1.—Methods of Administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the Medical Superintendence of the Hospital generally.

NOTE 2.—In the case of a Medical Officer of the Royal Army Medical Corps, a Certificate from a Principal Medical Officer under whom he has served, stating that he has, during a period of at least three months, been diligently engaged in acquiring a practical knowledge of Hospital Administration in relation to Infectious Diseases, may be accepted as evidence under *Rule* 4.

The Examination to be passed by the Candidate is prescribed as follows:—

PART I.

Chemistry, paper and practical.

Experimental Physics and Meteorology, practical.

Bacteriology and Pathology, paper and practical.

Candidates are liable to be examined in the method of conducting *post-mortem* Examinations.

PART II.

Hygiene and Epidemiology, paper.

Sanitary Engineering, paper.

Public Health Acts and Vital Statistics, paper.

Practical Sanitary Report.

The two Parts may be passed consecutively or wth an interval between, at the option of the Candidate, provided that the requisite curriculum for each Part has been completed before the Candidate presents himself.

Examinations for Part I. will begin on December 10, 1906, March 18, 1907, and June 3, 1907; for Part II. on December 13, 1906, March 21, 1907, and June 6, 1907.

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1, 1890, are required to apply to the Board of Trinity College for leave to present themselves, a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

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[a] These conditions do not apply to Practitioners registered, or entitled to be registered, on or before January 1, 1890.

A fee of £10 10s. (to be paid to the Senior Proctor) is required.

Course in Chemistry for D. P. H.

The complete analysis of water. Estimation of carbon dioxide, and detection of ammonia and other constituents or impurities, in air. Complete analysis of milk and butter. Detection of adulterants in milk, flour, tea, coffee, mustard, and pepper. Detection of preservatives in foods. Detection of picric acid in beer and of alum in bread and flour. Microscopic examination of starches. Determination of acidity in vinegar. Identification and examination of disinfectants. Detection of various poisons in contents of stomach. General chemistry of ether, chloroform, nitric acid, chloral. Assay of caffeine.

Fee for the Course, £5 5s.

Candidates can join at any time during the Medical year by arrangement with the Professor of Chemistry.

A collection of Sanitary Appliances has been placed in the Engineering Museum, with which Candidates should make themselves familiar.

The attention of Students is directed to the importance of obtaining a Diploma in Public Health as soon as possible after they obtain their Medical Degrees. An increasing number of Public Bodies are requiring it as well as the usual Qualifications in Medicine, Surgery, and Midwifery.

II.

Royal University of Ireland.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration. But Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the General Medical Council, as Students in Medicine, for at least

57 months, before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.
The First University Examination.
The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Experimental Physics, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in these subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

THE EXAMINATION FOR THE M.B., B.CH., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

This Examination consists of three parts:—

(*a*.) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(*b*.) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and Appliances; Surgical Anatomy; Ophthalmology and Otology,[a] Surgical Pathology.

(*c*.) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diploma recording his admission to the M.B., B.Ch. B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

HONOURS.

There are Special Examinations for Honours in connection with—

The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The M.B., B.Ch., B.A.O. Degrees Examination.

The Examinations for Honours are held subsequently to the corresponding Pass Examinations.

DIPLOMA IN PUBLIC HEALTH.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

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[a] Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

Every Candidate must, when entering for the Examination, produce[a]:—

(*a*.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c.

(*b*.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under (*a*.)) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—

(1.) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health Work; or

(2.) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or

(3.) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or

(4.) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School; or

(5.) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an Army Corps, District, or Command, recognised for this purpose by the General Medical Council; or

(6.) In the British Dominions outside the United Kingdom, a Medical Officer of Health of a Sanitary District having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health.

⁂ The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under *Rule* (*b*.), provided the Medical Officer of Health of the County or District in question permits the Assistant Officer to give the necessary instruction and to issue Certificates. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under *Rule* (*a.*), in the case of any Candidate who produces evidence that, after obtaining a registrable Qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health Administration, given by a Teacher or Teachers in the Department of Public Health of a recognised Medical School.

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[a] These rules (*a*), (*b*), shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890.

Every Candidate must produce evidence that, after obtaining a registrable Qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the Study of Methods of Administration.

Candidates at this Examination must answer in the following subjects:—

I. Physics.
II. Chemistry.
III. Meteorology.
IV. Sanitary Engineering and Architecture.
V. Bacteriology.
VI. Hygiene, Sanitary Law, and Vital Statistics.

There will be a practical examination, both chemical and microscopical, at which the candidate must make at least qualitative analyses.

In connection with the subjects of Sanitary Engineering and Architecture, candidates will be required to draw up a Sanitary Report upon the condition of dwelling-houses or other buildings selected for the purpose, and to read plans, scales, sections, &c.

The Examination consists of two parts, which may be passed separately or together.

Part I. comprises the following subjects:—

Physics.
Chemistry.
Meteorology.
Sanitary Engineering and Architecture.

Part II. comprises the following subjects:—

Bacteriology.
Hygiene, Sanitary Law, and Vital Statistics.

The Examination in each part is oral and practical as well as written.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Victoria Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of Lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, IRELAND.

REGULATIONS FOR THE EXAMINATIONS IN MEDICINE, SURGERY, AND MIDWIFERY REQUIRED FOR REGISTRATION UNDER THE MEDICAL ACT, 1886.

These Regulations are obligatory on all Candidates commencing their Studies on or after October 1st, 1902.

PRELIMINARY EXAMINATION AND REGISTRATION.

The General Medical Council requires that every Candidate shall produce evidence—

(*a*) Of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and

(*b*) Of having been registered by that Council as a Student in Medicine, according to Regulations, which may be obtained on application at the office of the General Medical Council, 299 Oxford Street, London, W., or its Branches—Dublin, 35 Dawson Street; Edinburgh, 54 George Square.

Each Candidate before receiving his Diplomas must produce a Registrar's Certificate, or other satisfactory evidence, that he has attained the age of twenty-one years.

PROFESSIONAL EXAMINATIONS.

Every Candidate is required to pass four Professional Examinations.

Candidates will be admissible to the various Examinations as under :—

First Professional Examination, not earlier than the end of the first winter session.

Second Professional Examination, not earlier than the end of the second winter session.

Third Professional Examination, not earlier than the end of the third year of medical study.

Final Professional Examination, not earlier than the end of the fourth year of medical study; but it cannot be completed till the end of the fifth year of medical study.

Before admission to any Examination every Candidate will be required to furnish evidence of having passed the previous Examination, and of having attended the various courses of instruction laid down in these Regulations for each Examination.

No Candidate shall be admitted to any Examination within three months of his rejection in the subjects of that Examination by this or any other Licensing Body.

FIRST PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £15 15s.

SUBJECTS OF EXAMINATION.

The subjects of the First Professional Examination are :—

1. Chemistry and Physics.
2. Biology.

Every Candidate is required to produce evidence—

1. Of having passed in the subjects of the Preliminary Examination; and
2. Of having attended Courses of Instruction in
   - (*a*) Theoretical Chemistry, six months.
   - (*b*) Practical Chemistry, three months.
   - (*c*) Physics, three months.
   - (*d*) Biology, three months.

Four complete years of Medical Study must be attended at a recognised Medical School after passing the First Professional Examination, and before completing the Final Examination.

NOTE.—The subjects of the First Professional Examination may be studied either at a Medical School, or at an Institution other than a Medical School recognised by the Colleges, after due inspection, for instruction in these subjects.

SECOND PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £10 10s.

SUBJECTS OF EXAMINATION.

The subjects for the Second Professional Examination are :—

1. Anatomy.
2. Physiology and Histology.

Every Candidate is required, before admission to the Second

Professional Examination, to produce evidence of having passed the First Professional Examination; also Certificates of having attended:—

Anatomical Dissections; two courses of six months each; or one course of six months and two courses of three months.

Lectures:—

(*a*) Anatomy, six months.
(*b*) Physiology, six months.
(*c*) Practical Physiology and Histology, three months.

THIRD PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £9 9s.

SUBJECTS OF EXAMINATION.

The subjects for the Third Professional Examination are:—

1. Pathology.
2. Materia Medica, Pharmacy, and Therapeutics.
3. Forensic Medicine and Public Health.

Candidates are not admitted to this Examination before the end of the third year of Medical Study.

Every Candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination, and Certificates of having attended courses of instruction in—

(*a*) Pathology.
  (1) A Systematic Course of three months.
  (2) A Laboratory Course of practical instruction in a recognised Medical School, three months.

These Courses may be taken concurrently.

(*b*) Materia Medica, Pharmacy, and Therapeutics, three months.
(*c*) Public Health and Forensic Medicine, three months.[a]

Candidates are recommended to present themselves at the same time in all the subjects of each of the above Examinations; but may present themselves in one or more of the specified divisions separately, provided they have completed the curriculum as far as it concerns the subject or subjects in which they present themselves.

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[a] **Nine of the twenty-seven months' Hospital necessary for the Final Professional Examination should be taken out in the Third Year.**

FINAL PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £6 6s.

SUBJECTS OF EXAMINATION.

The subjects of the Final Professional Examination are divided into three groups :—

1. Medicine, including Fevers, Mental Diseases, and Diseases of Children.
2. Surgery, including Operative and Ophthalmic Surgery.
3. Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children.

Every Candidate is required before admission to produce evidence—

1. Of having passed the Third Professional Examination.
2. Of having attended—
   - (*a*) A Medico-Chirurgical Hospital for twenty-seven months (three Hospital years).
   - (*b*) A Midwifery Hospital, or Maternity, including evidence of having been present at thirty labours; six months.
   - (*c*) Clinical Instruction in Ophthalmic and Aural Surgery, three months.
   - (*d*) Clinical Instruction in Mental Diseases, one month.
   - (*e*) Vaccination, Six Attendances to be signed by a Public Vaccinator.[a]
   - (*f*) Courses of Instruction at a recognised Medical School in—
     - (*a*) Medicine, six months.
     - (*b*) Surgery, six months.
     - (*c*) Operative Surgery, three months.
     - (*d*) Midwifery (including diseases peculiar to women and to new-born children), six months.

Before admission to the Final Professional Examination in Medicine, satisfactory evidence must be produced of attendance in Fever Wards during either the third or subsequent year of Hospital attendance.

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[a] By a Regulation of the English Privy Council no one can be appointed a public vaccinator in England who does not produce a certificate of proficiency in vaccination from a person authorised by the English Privy Council to grant same.

A similar Regulation of the Local Government Board for Ireland came into force on May 1, 1906 (see footnote on page 299).

A Student at or after the end of his fourth year may present himself at any one of the groups 1, 2, or 3, provided he has completed his curriculum as far as concerns the group in which he presents himself. But one of the groups must be deferred till the end of his fifth year.

Candidates must have passed in *all* the Subjects of the Final Examination before any Diploma can be granted.

NOTE 1.—In the event of a Candidate showing himself ignorant of a subject or subjects, it shall be competent for the Committee of Management, on the recommendation of the Examiners, to require such Candidate, before presenting himself for re-examination, to produce evidence of such further instruction in such subject or subjects as the Committee of Management shall direct.

NOTE 2.—This curriculum shall be compulsory on all Students who commence their professional studies after the date of its adoption by the Colleges; and all Students at present studying under the old regulations shall be permitted to present themselves for examination under the new scheme at and after the Autumn Examinations, 1902: provided that, if any Student have presented himself for examination under the new scheme, he shall not be permitted to revert to the old scheme.

NOTE 3.—After the 1st of October, 1905, it shall be compulsory on all Students to present themselves under the new curriculum, save for such exemptions as the Committee of Management may decide to be necessary in order to prevent injustice.

EXEMPTIONS.

Candidates who, subsequent to January 1st, 1892, have passed in any of the required subjects at examinations conducted by any Licensing Body recognised by the Royal College of Physicians and the Royal College of Surgeons may, on application to the Committee of Management, be exempted from further examination in such subjects under this Conjoint Scheme.

Certificates of Study.

Winter Courses shall consist of not less than 50 Lectures, and Summer Courses of not less than 30 Lectures.

No Lecture Certificate shall be received unless the number of attendances certified thereon shall be at least *two-thirds* of these numbers.

As regards Medical and Surgical Hospital Certificates, the number of daily attendances certified shall not be less than 80 for the Winter Session, and 40 for the Summer Session.

Every Candidate shall produce evidence of having acted as Medical Clinical Clerk and as Surgical Dresser.

In Mental Diseases 12 attendances will be required.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the Preliminary Examination, be admitted on payment of £1 1s. (half fee).

2. They will be permitted to study in the Library and Museums of the College.

3. Their fee for the First Professional Examination will be reduced by £5 5s.

DATES OF CONJOINT EXAMINATIONS.

Preliminary	-	March, September, and October.
First Professional	-	April, June, and October.
Second ,,	-	January, April, July, and October.
Third ,,	-	January, April, July, and October.
Final Examination	-	January, April, July, and October.

REGULATIONS FOR CANDIDATES FOR THE DIPLOMA IN PUBLIC HEALTH.

The following regulations are compulsory on all Candidates presenting themselves for Examination after January 1st, 1903, except as undernoted.

Stated Examinations for the Diploma in Public Health commence on the first Monday of the months of February, May, July and November.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £15 15s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in Public Health must be a Registered Medical Practitioner. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, one fortnight before the examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of the prescribed course of study.

Candidates registered as Medical Practitioners or entitled to be so registered after January 1st, 1890, must comply with certain Resolutions and Rules, adopted by the General Medical Council on December 2nd, 1902, May 29th, November 30th, 1903, and May 31st, 1904, in regard to Diplomas in Public Health.

⁂ Certain of the *Rules* as to study shall not apply to Medical Practitioners, registered, or entitled to be registered, on or before January 1st, 1890.

⁂ The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in Public Health comprises the following subjects:—Chemistry and Physics, Meteorology, Engineering and Architecture, Hygiene, Bacteriology, Vital Statistics, Sanitary Law.

IV.

APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The Final Examinations are held in January and July.

The Fees payable for each Examination are as follow:—

First Professional	- -	£5	5	0
Second ,,	- -	5	5	0
Third ,,	- -	5	5	0
Final Examination	- -	6	6	0

A Candidate is allowed for each Professional Examination which he has completed at any other Licensing Body, except the Final.

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, additional fees will be charged.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

- Anatomy (Lectures).
- Chemistry—Theoretical.
- Midwifery.
- Practice of Medicine.
- Physiology, or Institutes of Medicine.
- Surgery.
- Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—

- Materia Medica.
- Medical Jurisprudence.
- Chemistry—Practical.
- Practical Physiology and Histology.
- Operative Surgery.
- Physics.
- Clinical Ophthalmology.
- Biology.
- Clinical Instruction in Mental Disease.
- Pathology.
- Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months of this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision respectively of a Physician and of a Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

Licentiates of this Hall are entitled to enter as Candidates for the Fellowship of the Edinburgh Royal College of Surgeons.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary Street, Dublin.

DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.

UNIVERSITY OF DUBLIN.

DEGREE AND LICENCE IN DENTAL SCIENCE.

The University of Dublin grants both a Degree and a Licence in Dental Science. To obtain the former, Candidates must have taken a Degree in Arts; the Licence is awarded to duly qualified persons who have passed the Public Entrance Examination of Trinity College, Dublin.

LICENCE IN DENTAL SCIENCE.

(*L. Dent. Sc., Univ. Dub.*)

Before passing the Entrance Examination in Trinity College or immediately after doing so, Students are advised to begin their three years' Course of instruction in *Dental Mechanics*, and to devote all their time during one year to this subject. Dental Mechanics may be learnt in the Mechanical Department of the Dental Hospital, where a Fee of £100 is charged, or from a

Registered Dentist, in which case the Fee charged is a matter of arrangement.

Having passed the Public Entrance Examination in Trinity College. Students should register themselves as Dental Students at the Registrar's Office in the Medical School, and commence the prescribed course of study, of which particulars may be obtained from the Registrar of the School of Physic in Ireland.

DEGREE IN DENTAL SCIENCE.

(*M. Dent. Sc., Univ. Dub.*)

The Course of study recommended in the case of Candidates for the Degree in Dental Science is the same as that for the Licence, with the addition of—

Pathology Lectures, ...	£2	2	0
Pathology, Practical, ...	2	2	0
Bacteriology, ...	3	3	0
	£7	7	0

which should be taken out in the fourth or fifth year.

Before presenting themselves for the Final Examination for the Degree, Candidates must—(1) have passed the Examination for the B.A. Degree; (2) have attended satisfactorily the Courses indicated above; and (3) must have had their names on the books either of the Medical School or of the Dental School, for a period of not less than five years. They must also have passed the Previous Dental Examination in all its parts, and have attained the age of twenty-one years.

The subjects for the Degree Examination are—

Medicine.
Surgery.
Pathology.
Bacteriology.
Dental Anatomy, Human and Comparative.
Dental Microscopy.
Dental Surgery and Pathology.
Dental Mechanics.
Orthodontia.

The fee for the Examination is £5.

Examinations will be held on Nov. 20, 1906; March 19, June 25, 1907. Notice must be given to the Registrar of the School of Physic not later than a week before the Examination begins.

The Board of Trinity College is willing to consider applications, on the part of qualified practitioners and others, for recognition of Courses taken previous to the establishment of the Degree and Licence, in case they proceed to complete the Course.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

DIPLOMA IN DENTAL SURGERY.

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age before being admitted to the Final part of the Examination.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Dental Mechanics, including the Metallurgy of the workshop.

   Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificates required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.
   1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Dental Mechanics. Fee, £28 7s.
   2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.[a]

As regards Dental Hospital practice, full information is contained in the Calendar for 1906–07 of the School of Dentistry in connection with the Incorporated Dental Hospital of Ireland, Lincoln Place, Dublin. The Calendar may be obtained on application to the Dean, Dr. A. W. W. Baker.

[a] Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's Green, Dublin.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, September 8, 1906.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending September 8, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.7 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,101,499. The deaths registered in each of the four weeks ended Saturday, September 8, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks
	Aug. 18	Aug. 25	Sept. 1	Sept. 8	
22 Town Districts	17.4	19.3	19.0	21.7	19.4
Armagh -	20.6	27.5	34.4	13.7	24.0
Ballymena	4.8	9.6	14.4	14.4	10.8
Belfast -	17.8	19.8	19.1	21.5	19.5
Clonmel -	–	30.8	10.3	20.5	15.4
Cork -	13.7	21.2	16.4	22.6	18.5
Drogheda -	4.1	20.4	4.1	16.3	11.2
Dublin - (Reg. Area)	19.7	21.5	21.9	24.1	21.8
Dundalk -	16.0	8.0	16.0	23.9	16.0
Galway -	27.2	7.8	35.0	11.7	20.4
Kilkenny -	19.7	24.6	–	19.7	16.0
Limerick -	17.8	13.7	15.0	20.5	16.8
Lisburn -	–	9.1	4.5	9.1	5.7
Londonderry	14.9	11.2	18.6	19.8	16.1
Lurgan -	8.9	13.3	8.9	17.7	12.2
Newry -	25.2	4.2	21.0	25.2	18.9
Newtownards	34.3	17.2	11.4	11.4	18.6
Portadown -	10.3	15.5	25.8	31.0	20.6
Queenstown	6.6	19.8	6.6	–	8.3
Sligo -	19.2	4.8	9.6	4.8	9.6
Tralee -	10.6	26.4	10.6	15.9	15.9
Waterford -	11.7	19.5	9.7	25.3	16.6
Wexford -	23.3	28.0	42.0	28.0	30.3

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, September 8, 1906, were equal to an annual rate of 6.0 per 1,000, the rates varying from 0.0 in eleven of the districts to 14.4 in Ballymena—the 3 deaths from all causes in that district comprising 2 from measles and one from diarrhœa. The 151 deaths from all causes in Belfast include one from measles, one from scarlet fever, 7 from whooping-cough, one from enteric fever, and 39 from diarrhœal diseases. The 33 deaths in Cork include one from whooping-cough and 7 from diarrhœal diseases. Among the 16 deaths in Londonderry are one from measles, one from whooping-cough, one from diphtheria, and 3 from diarrhœal diseases. The 15 deaths from all causes for Limerick include one from scarlet fever and one from diarrhœa, and of the 6 deaths in Wexford 2 were from diarrhœal diseases.

In the Dublin Registration Area the births registered during the week ended Saturday, September 8, amounted to 268—140 boys and 128 girls; and the deaths to 184—81 males and 103 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 25.3 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 24.1 per 1,000. During the thirty-six weeks ending with Saturday, September 8, the death-rate averaged 22.4, and was 3.1 below the mean rate for the corresponding portions of the ten years, 1896–1905. The deaths (184) included one death from whooping-cough, 2 deaths from enteric fever, 49 deaths from diarrhœal diseases (of which last, 46 were deaths of children under 5 years of age). In each of the 3 preceding weeks, the deaths from whooping-cough were one, 0, and 0; those from enteric fever were 0, 0, and 2; and those from diarrhœal diseases were 29, 27, and 28. The deaths of 7 children under 5 years of age, during the period under notice, were returned as from *gastro-enteritis*, and were classified under diseases of the digestive system. The mean of the daily readings of the earth thermometer at 4 feet was 59.1°. The death of one person was directly attributed to influenza.

Lobar pneumonia and broncho-pneumonia each caused one death, and *pneumonia* (not defined) caused 2 deaths.

Of 30 deaths from all forms of tuberculous disease, 8 were from tubercular phthisis, 13 were returned as *phthisis* (not otherwise defined), 5 deaths were caused by tubercular meningitis, tubercular peritonitis caused one death, and 3 deaths were due to other forms of the disease. In the 3 preceding weeks, deaths from all forms of tuberculous disease were 30, 29, and 27, respectively.

There were 5 deaths from carcinoma, and 2 deaths from cancer (undefined).

The death of one infant was attributed to prematurity.

Of 12 deaths from diseases of the brain and nervous system, 4 were of children under 5 years of age from *convulsions.*

Diseases of the heart and blood vessels accounted for 21 deaths, and bronchitis was the cause of 7 deaths.

Of 5 deaths from accidental causes, one was by a motor car, one by burns, 2 by drowning, and one by suffocation in bed of an infant under one month old.

In one instance the cause of death was "uncertified," there having been no medical attendant during the last illness; this case was that of a child under one year old.

Eighty-three of the persons whose deaths were registered during the week were under 5 years of age (63 being infants under one year, of whom 6 were under one month old) and 33 were aged 60 years and upwards, including 12 persons aged 70 and upwards, of whom 5 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and the Executive Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended September 8, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	Aug. 18	-	*	*	1	-	-	5	-	1	7	7	-	*	*	*	21
	Aug. 25	-	*	*	4	-	-	4	-	1	10	7	-	*	*	*	26
	Sept. 1	-	*	*	6	-	-	2	-	-	7	13	-	*	*	*	28
	Sept. 8	-	*	*	4	-	-	2	-	3	14	11	-	*	*	*	34
Rathmines and Rathgar Urban District	Aug. 18	-	*	*	1	-	-	-	-	1	-	-	-	*	*	*	2
	Aug. 25	-	*	*	1	-	-	-	-	-	1	-	-	*	*	*	2
	Sept. 1	-	*	*	-	-	-	1	-	-	2	-	-	*	*	*	3
	Sept. 8	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
Pembroke Urban District	Aug. 18	-	-	-	-	-	-	-	-	1	-	-	-	*	4	-	5
	Aug. 25	-	-	-	1	-	-	-	-	1	-	2	-	*	-	-	4
	Sept. 1	-	-	-	2	-	-	-	-	1	-	-	-	*	6	-	9
	Sept. 8	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-
Blackrock Urban District	Aug. 18	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 25	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 8	-	*	*	1	-	-	-	-	-	1	-	-	*	*	*	2
Kingstown Urban District	Aug. 18	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 25	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	
	Sept. 8	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	
City of Belfast	Aug. 18	-	*	*	17	-	-	2	2	6	17	8	-	*	*	*	52
	Aug. 25	-	*	*	19	-	-	4	-	11	8	9	-	*	*	*	51
	Sept. 1	-	*	*	30	-	-	1	2	5	12	9	-	*	*	*	59
	Sept. 8	-	*	*	18	-	-	5	1	10	14	2	-	*	*	*	50

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

One case of measles was admitted into hospital during the week ended September 8, 1906, and 4 cases remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 5 were discharged, and 38 cases remained under treatment at the close of the week. This number is exclusive of 12 patients in Beneavin Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus was admitted to hospital during the week, and 2 cases remained under treatment at its close.

One case of diphtheria was admitted to hospital, 3 were discharged, and 18 patients remained under treatment at the close of the week.

Sixteen cases of enteric fever were admitted to hospital, 3 were discharged, and 43 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 8 cases of pneumonia were admitted to hospital, 3 were discharged, and 20 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, September 8, in 76 large English towns, including London (in which the rate was 20.9), was equal to an average annual death-rate of 22.3 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.6 per 1,000, the rate for Glasgow being 15.9, and for Edinburgh 14.7.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended September 8. From this Return it appears that of a total of 36 cases notified 18 were scarlet fever, 8 diphtheria, 6 erysipelas, and 4 enteric fever. Among the 219 cases of infectious diseases in hospital at the close of the week were 95 cases of scarlet fever, 24 of enteric fever, 21 of measles, 20 of diphtheria, one of membranous croup, 8 of erysipelas, and 6 of whooping-cough.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20 *N., Long.* 6° 15′ *W., for the Month of August,* 1906.

Mean Height of Barometer,	29.915 inches.
Maximal Height of Barometer (28th, at 9 a.m.)	30.350 „
Minimal Height of Barometer (13th, at 9 a.m.)	29.421
Mean Dry-bulb Temperature,	61.1°.
Mean Wet-bulb Temperature,	58.0°.
Mean Dew-point Temperature,	55.3°.
Mean Elastic force (Tension) of Aqueous Vapour,	.441 inch.
Mean Humidity,	82.1 per cent.
Highest Temperature in Shade (on 31st),	77.0°.
Lowest Temperature in Shade (on 19th & 30th),	49.1°.
Lowest Temperature on Grass (Radiation), (30th),	43.3°.
Mean Amount of Cloud,	60.7 per cent.
Rainfall (on 17 days),	1.761 inches.
Greatest Daily Rainfall (on 3rd),	.382 inch.
General Directions of Wind,	W., S.W.

Remarks.

A warm, generally favourable month—yet with as many as 17 rain-days in Dublin, although the total rainfall was only 1.761 inches, or 58 per cent. of the average. In the North of England, Scotland, and the Irish provinces, with the exception of Leinster, the rainfall of the month was heavy and frequent; whereas in the south and south-east of England dry weather prevailed—particularly in the London district, where the rainfall was only .82 inch on 7 days (in St. James's Park, Westminster). A cold period, with fresh N.W. winds, occurred from the 15th to the 18th inclusive, but the last week was remarkable for its dryness and warmth. On the 31st the thermometer rose in the shade to 77.0° at Fitzwilliam Square, Dublin, 80.0° in Trinity College, Dublin, 80.5° at the Royal Botanic Gardens, Glasnevin, 84.8° at the Ordnance Survey, Phœnix Park, and 80.0° at Birr Castle, King's Co. In Great Britain even higher temperatures were recorded—85° at Leith and Harrogate, 86° at Folkstone, 87° at Bettws-y-Coed, 88° at Bath and Manchester, 89° at Birmingham, 90° at Oxford, 91° in London and at Margate, 91.5° at Ross (Herefordshire), 92° at Hillington (Norfolk), and 93° at Nottingham.

The duration of bright sunshine was estimated at 197.5 hours, or a daily average of 6.4 hours.

In Dublin the arithmetical mean temperature (63.2°) was much above the average (59.7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 61.1° In the forty-two years ending with 1906, August was coldest in 1881 (M. T. = 57.0°), and warmest in 1899 (M. T. = 63.4°).

The mean height of the barometer was 29.915 inches, or 0.018 inch above the corrected average value for August—namely, 29.897 inches. The mercury rose to 30.350 inches at 9 a.m. of the 28th, and fell to 29.421 inches at 9 a.m. of the 13th. The observed range of atmospheric pressure was, therefore, .929 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 61.1°. It was 1.3° above the value for July, 1906. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .47), the mean temperature was 62.8°, or 3.5° above the average mean temperature for August, calculated in the same way, in the thirty years 1871–1900, inclusive (59.3°). The arithmetical mean of the maximal and minimal readings was 63.2°, compared with a thirty years' average of 59.7°. On the 31st, the thermometer in the screen rose to 77.0°—wind, E to calm; on the 19th the temperature fell to 49.1°—wind, W.N.W. A like reading occurred on the 30th—wind, E. The minimum on the grass was 43.3° on the 30th.

The rainfall was 1.761 inches on 17 days. The average rainfall for August in the thirty-five years 1866–1900, inclusive, was 3.040 inches, and the average number of rainy days was 17. The rainfall, therefore, was little more than half the average, while the rainy days were equal to the average. In 1900 the rainfall in August was very large—5.871 inches on 17 days; in 1889, also, 5.747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1904, 2.903 inches fell on 18 days. August, 1905, established a record for rainfall in this month in Dublin, for the measurement was 7.019 inches on 22 days, 3.436 inches having fallen on the 25th.

High winds were noted on 11 days, but attained the force of a gale on only one day—the 25th, and then only for a short time. Temperature reached 70° in the screen on 17 days, compared with 18 days in August, 1899, 6 in 1900, 7 in 1901, only one day in both 1902 and 1903, 9 days in 1904, and one day in 1905. Thunderstorms occurred on the 3rd and 16th. Solar halos were seen on the 8th, 9th, 19th and 24th. Hail fell in the thunderstorm on the 3rd. There was fog on the 23rd, 29th, and 31st.

The rainfall in Dublin during the eight months ending August 31st amounted to 15.425 inches on 139 days, compared with 18.041 inches on 131 days in 1905, 16.808 inches on 135 days in 1904, 21.872 inches on 157 days in 1903, 18.456 inches on 133 days in 1902, 14.384 inches on 106 days in 1901, 9.455 inches on 96 days during the same period in 1887, and a thirty-five years' average of 17.660 inches on 130 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.918 inches, the range of atmospheric pressure being from 30.356 inches at 9 a.m. of the 28th to 29.424 inches at 9 a.m. of the 13th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 61.5°. The arithmetical mean of the daily maximal and minimal temperatures was 62.4°. The screened thermometers rose to 80.0° on the 31st, having fallen to 41.7° on the 30th. On the latter day the grass minimum was 39.4°. On the 4th the black bulb *in vacuo* rose to 130.9°. Rain fell on 16 days to the amount of 1.568 inches, the greatest fall in 24 hours being .339 inch on the 24th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 176.9

hours, of which 11.0 hours occurred on the 30th, 10.2 hours on the 22nd, and 10.1 hours on the 31st. In August, 1904, there were 183.75 hours of bright sunshine, and in 1905, 121.9 hours. The mean earth-temperatures were—at 1 ft., 61.9°; at 4 ft., 58.4°. The one-foot thermometer ranged between 59.0° on the 19th and 63.8° on the 22nd. The four-feet thermometer ranged from 57.8° on the 1st to 59.1° on the 31st.

Dr. Christopher Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park at 1.635 inches, of which .350 inch fell on the 3rd, .290 inch on the 8th, and .255 inch on the 24th. The rainy days were 14.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 1.48 inches on 15 days. The maximal fall in 24 hours was .34 inch on the 3rd. The corresponding figures for 1901 were 3.11 inches on 16 days, for 1902, 2.73 inches on 18 days, for 1903, 2.78 inches on 25 days, for 1904, .98 inch on 20 days, and for 1905, 9.35 inches on 21 days. The mean shade temperature was 63.6°, the range being from 50° on the 30th to 78° on the 31st. Thunder and lightning occurred on the 3rd. In August, 1901, the M. T. was 60.5°, in 1902, it was 58.7°, in 1903, 58.6°, in 1904, 60.5°, and in 1905, 59.1°.

At White Cross, Stillorgan, Miss Muriel E. O'Sullivan measured 1.535 inches of rain on 15 days, the largest amount which fell in 24 hours being .340 inch on the 3rd.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 2.369 inches on 17 days; the heaviest fall in 24 hours was .552 inch on the 23rd. In August, 1905, 7.181 inches fell on 21 days, the greatest fall in 24 hours being 3.110 inches on the 25th. The mean shade temperature was 61.3°, the extremes being—highest, 76.0° on the 20th; lowest, 45.0° on the 18th.

According to Mr. R. Cathcart Dobbs, J.P., at Knockdolian, Greystones, Co. Wicklow, the rainfall for August was 1.765 inches on 13 days, compared with 8.915 inches on 22 days in 1905, 2.875 inches on 20 days in 1904, 2.870 inches on 27 days in 1903, 3.520 inches on 16 days in 1902, and 3.625 inches on 15 days in 1901. The heaviest fall in 24 hours was .400 inch on the 24th. The total fall since January 1 amounts to 15.455 inches on 99 days, compared with 21.058 inches on 110 days in 1905, 18.577 inches on 129 days in 1904, 23.100 inches on 134 days in 1903, 23.161 inches on 111 days in 1902, and 19.685 inches on 100 days in 1901.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 3.715 inches on 21 days. The largest measurements in 24 hours were .86 inch on the 24th, and .76 inch on the 1st. The rainfall of the first 8 months of 1906 equals 35.090 inches.

According to Mr. W. Miller, the rainfall in Cork City was 1.47 inches, or 2.02 inches less than the average, and the rainy days were 11. The greatest fall was .43 inch on the 24th. The mean temperature of the month was 59.8°, or 0.2° above the average. The thermometer rose to 73° on the 20th and fell to 44.5° on the 13th. The rainfall for 1906 up to August 31 was 19.99 inches on 116 days, compared with averages of 23.69 inches and 123 days respectively.

At the Ordinance Survey Office, Phœnix Park, Dublin, rain fell on 16 days to the amount of 1.882 inches, the greatest measurement in 24 hours being .415 inch on the 24th. The total amount of sunshine was 182.4 hours, the most on one day being 13.1 hours on the 30th. The thermometer rose to 84.8° in the shade on the 31st, having fallen to 39.4° on the 30th.

Dr. J. Byrne Power, D.P.H., F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 62.1°, being 1.9° above the average for August during 19 previous years (1873–83 and 1898–1905). The extremes were—highest, 77°, on the 31st; lowest, 47.5°, on the 19th. At Bournemouth the mean was 63.6°, the extremes being—highest, 82°, on the 30th; lowest, 48°, on the 29th. The mean daily range was 12.9°, at Bournemouth it was 15.9°, the extreme range was very considerable at both stations, being 23.5° on the 31st at Kingstown, and 31° on the 30th at Bournemouth. It may also be noted that it was 30.5° on the 30th at the Ordnance Survey Office, Phœnix Park, within 3 miles of the coast. The mean temperature of the sea at Sandycove bathing-place was 57.5°, and 1.2° below the average for the month during the previous 8 years. The relative humidity was 73 per cent., being 1.2 per cent. below the average for the month during the previous 5 years. The rainfall was 1.69 inches on 15 days, and 1.4 inches below the average during 16 previous years (1873–83 and 1898–1905), at Bournemouth it was 0.59 inch on 12 days. The total duration of bright sunshine was 198.3 hours, being 33.7 hours above the average for the month during the previous 5 years, as compared with 182.4 hours in the Phœnix Park, 206.2 hours at Southport, and 227 hours at Bournemouth.

PERISCOPE.

A CASE OF TACTILE APHASIA.

M. M. **Raymond** and Egger, of Paris, communicated the following case to the section of neurology, psychiatry, and criminal anthropology at the Fifteenth International Medical Congress, Lisbon, April, 1906. A woman, aged sixty years, had a monoplegia strictly limited to the right hand. Movements became re-established little by little. Examination of sensation showed that the affected right hand could feel as well as the left. Sensation of the movement of the fingers and of their positions was also preserved. When an object was placed in this hand to feel (the patient having her eyes shut) she could not say what the object was, although all its physical qualities were recognised. If, for instance, a lump of sugar was given her to feel the patient said—" it is a small object, square, flat; it is rough, it has angles, but I do not know what it is." The left hand recognised instantly that it was a lump of sugar. Just the same happened in the case of every other object. The sensory impressions which transmit physical qualities, heat and cold, smoothness and roughness, softness and hardness, and so on, as well as those which direct the movement of the fingers and their positions, were preserved, and reached the sensorium intact. There they did not remain in a state of isolated perception; they communicated with each other to form the idea of extent and shape. This shows that the distinctive lesion had left intact the various centres for sensory impressions and their respective paths of associations. A primary degree of association, therefore, has been maintained—that, namely, which carries the perception of surface and shape. But there all further associative evolution is arrested. In fact, as the patient does not know how to find the word to express the object which, notwithstanding, she describes in all its details, we must conclude that the paths of associations which connect the sensory centres with the zone of language are interrupted. We find an exactly analogous symptomatology in the case of verbal deafness. In this latter affection the patient hears and understands perfectly well all the tonal modulations of the spoken word, but without understanding the meaning of the word. Tactile aphasia is a very rare variety of sensory aphasia.—*La Presse médicale, Mercredi*, 25 Juillet, 1906.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Muiracithin.

Messrs. Reitmeyer & Company, of London, have submitted samples of this new nervine tonic and aphrodisiac. According to the new edition of Martindale's Extra-Pharmacopœia muiracithin consists of the residue *in vacuo* of 100 grammes of fluid extract of a Brazilian drug, *Muira-Puama*, and 5 grammes of lecithin, with liquorice powder added, made into 100 pills. The dose is three to four pills daily before meals, one morning, one at noon, and two in the evening. Lecithin, a compound glycerophosphate, is a constituent of the brain and of yolk of egg, and has earned a reputation in the treatment of various nervous and exhausting diseases. Muira-Puama was mentioned as being efficacious in the treatment of nervous disorders in the seventh edition (1896) of Bocquillon-Limousin's *Formulaire des Médicaments nouveaux*. The French spelling of the drug is Moyrapuama, and an early account of it will be found, under the heading *Acanthea virilis* (*Pohl*), at page 10 of the *Formulaire*, so far back as 1896. The dose of the fluid extract, prepared according to the American method, is from 10 to 20 drops before each meal.

"*Tabloid*" *Menthol and Eucalyptus Pastilles.*

Each of these tabloids contains—menthol, gr. 1/20; oil of eucalyptus, min. ½. This is an excellent combination for the treatment of infective, inflammatory, ulcerated or catarrhal conditions of the mouth and throat. The "Tabloid" Pastilles present a pleasant and efficient means of treatment. They ensure prolonged application to the affected parts, of stimulating, anæsthetic, antiseptic, and deodorant principles in suitable solution, and are superior to, and more convenient than the paints, sprays and inhalations in ordinary use. They relieve hoarseness and throat pain and strengthen the voice. One may be dissolved slowly in the mouth, and repeated as necessary, "Tabloid" Menthol and Eucalyptus Pastilles are issued in metal boxes of two sizes by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C.

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PART I.

ORIGINAL COMMUNICATIONS.

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ART. XII. —*Bacterial Diseases in Plants.*[a]

By F. O'B. ELLISON, B.A.; Assistant to the Professor of Institutes of Medicine, School of Physic in Ireland, Trinity College, Dublin.

IT would be superfluous to remind the members of the Dublin University Biological Association of the fact that the greatest advances made in medicine and surgery in recent years have been due to the recognition of the enormously important part played by bacteria in health and disease; and, indeed, in the economy of the world's cycle of life generally. The principles of strict asepsis in surgery—of which we in Dublin are so justly proud—and the precautions for isolation and disinfection in cases of infectious disease all depend upon the correct appreciation of the part played by bacteria in such cases.

The frequence of bacterial disease in animals—especially man—is a matter of common knowledge, and even where the specific germ has never been isolated we have long come to the conclusion that most of the zymotic diseases are bacterial in origin.

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[a] Read before the Dublin University Biological Association.

Plants, however, as well as animals, have their diseases. Some of these diseases, also, like many of those in animals, are infectious. Here, however, we meet with a striking contrast between the diseases of plants and those of animals. While a large majority of the infectious or communicable diseases of animals are due to bacterial parasites, and only a few due to parasites of an animal or higher vegetable nature, the vast majority of the infectious diseases of plants are due to fungi, having a high degree of organisation, while only a small number at present known have been traced to a bacterial origin.

In man we have a few diseases, such as Actinomycosis. Favus, Tinea and Parasitic Stomatitis or Thrush, caused by fungus parasites, while in plants, on the other hand, the hosts of more or less destructive affections, such as the Potato Blight, and the thousand and one rusts, smuts, mildews and moulds, which trouble the farmer and gardener, are all due to attacks of higher fungi; while the bacteria which line the pockets of our M.D.'s have hitherto been shown to be the cause of only a few pathological conditions in plants, and these, happily, not widespread.

Before proceeding to describe some of the bacterial diseases of plants which have been investigated, it might be of interest to discuss "Why are the bacteria so partial in their attacks to animals, and to what do the plants owe their comparative immunity?"

The question, I think, admits of a fairly satisfactory answer. As you are all aware, the fluids of the animal body, with the exception of the gastric juice and the urine, are alkaline in reaction, and an alkaline medium, above all, is suited to the growth of bacteria and other low forms of life. Consequently, animal tissues are comparatively easy of invasion by bacteria, as far as chemical composition is concerned. The cell sap of plants, on the other hand, is almost invariably *acid.* Apply blue litmus to almost any freshly-cut surface of a growing part of a plant and it will be reddened by the acid sap. The antiseptic properties of the gastric juice are well known to physiologists, and this acid cell-sap protects plants from bacterial invasion. The acids most usually present are malic, formic, acetic, citric, and oxalic acids. Besides acids, other substances, having antiseptic properties, are often found in the cells of plants. Tannin occurs generally in the cortical cells, while ethereal or volatile oils are also abundant, and possess marked antiseptic properties. These special substances are generally found in the cells of the more external parts of the plant body; in other words, in the parts more exposed to bacterial infection. Tannin can be readily recognised by the blue colour which it gives with ferric chloride and the red precipitate which it produces on treatment with potassium bichromate solution. The protoplasm of plants, like all other protoplasm, is alkaline in reaction.

The bacterial diseases of plants have been chiefly investigated in France, Germany, and the United States of America. In France especially, Prillieux, the Director of the French Department of Agriculture, has done good work both in investigating obscure plant diseases and in summarising the results of experiments in France and other countries.

The first observations of a bacterial attack which caused any considerable damage to a living plant was made by M. de Vilmon in 1878. The affection is known as the Pink Smut of wheat. Several species (varieties) of wheat were then observed to present a peculiar appearance—the grains being badly developed, wrinkled, and of a pink colour. The husk is loose and easily detached. On making a tangential section a bright, reddish-purple colour is visible in the outer layers. The colour is most strongly marked when the grain is broken into moderately-sized fragments; when ground it is less marked. The layers which are most strongly coloured are those which contain only gluten, and no starch—namely, the outer layers of the grain. In the other parts the depth of the colour seems to depend on the amount of nitrogenous material present. Not less striking than the colour is the presence of a large cavity hollowed out in the substance of the grain. It is situated opposite the longitudinal furrow, and extends from the embryo to the other end of the grain. In grains which have been badly attacked several spaces are visible, forming a large, irregular cavity. These spaces are always surrounded by a zone of greater or less thickness, in which the substance of the grain is transparent and devoid of starch. Inside this is a cloudy layer, forming the wall of the cavity, and projecting into it here and there in opaque, rounded masses. These are masses of spherical or ovoid bacteria in different stages of development. They are aggregated into masses possessing but little coherence, and it is these bacteria which secrete the purple material. They have been called *Micrococcus tritici.* They absorb the starch and proteids of the grains, and erode the tissues, beginning at the furrow, where they gain entry, until they have excavated large cavities. The destructive action of the bacteria is exercised, first on the starch grains, next on the proteids, and finally on the cell walls. The starch grains are attacked from outside. They diminish in size until there is nothing left but very minute granules, which are seen lying in the spaces which they originally occupied, in the middle of apparently unaltered gluten.

These remnants of starch grains can be demonstrated by treatment with iodine. The gluten is in turn attacked, most frequently, but not always, after the starch. In certain places one finds a mass of greatly altered gluten reduced to an irregular, amorphous lump, completely penetrated by myriads of micrococci, in the middle of a cell which also contains grains of starch, greatly reduced in size, it is true, but the complete absorption of which has not preceded the attack on the nitrogenous material. The cell walls are finally attacked. They swell up while their contents are disappearing; then are attacked by the bacteria, and their cavities are greatly increased in size, until finally they become merged in the space occupying the centre of the grain, as has been already described. This disease would be a very serious thing if it were to spread extensively. Fortunately, it is rare, and the damage hitherto has been trifling.

Van Tieghem describes a potato rot as caused by infection of the tubers with the butyric acid bacillus *B. amylobacter*, which lives on the sugar and starch, and also actively attacks the cell walls. This is the bacillus which is used in retting hemp and flax, and on gaining access to a wound in the potato tuber it quickly causes its complete disorganisation. Two days after inoculation, white froth was found to ooze out of the small wound, composed of starch grains and *B. amylobacter* in various stages of development. The froth increased next day, and then dried into a porous mass, which closed up the small wound. Simultaneously the cellular tissue of the tuber became softened, and finally liquid, from the gradual destruction of all the cell walls, beginning at the point of inoculation. Finally, the tuber is reduced to a bag, composed of the skin, filled with an acid liquid, resembling soup, and containing grains of starch and albumen and spores of *B. amylobacter*. Kramer, however, showed that this was due to a different bacillus from *B. amylobacter* of V. Tieghem. He obtained it in cultures, even when the plants were not affected with the ordinary potato blight. He found it in the tubers attacked by the Wet Rot, and succeeded in cultivating it in suitable media, such as an aqueous extract of boiled potato, to which 1 to 2 per cent. of grape sugar had been added. With these cultures he succeeded in infecting sound tubers, and the phenomena produced strongly resembled those obtained by V. Tieghem by inoculation with *B. amylobacter*. These bacilli attacked the sugar, cell walls, and intercellular substance, but not the starch, producing CO_2 and butyric acid, and the pulp of the tuber had an acid reaction. The nitrogenous materials are attacked in turn, but more slowly, and under the influence of the same bacillus suffer a putrid decomposition with the formation of ammonia and other substances which neutralise the butyric acid, and the reaction of the tuber finally becomes alkaline.

The bulbs of hyacinths are also subject to attacks from the same bacilli, which liquefy the tissues, and give off the odour of butyric acid. It has been shown by experiment that *B. amylobacter* can attack fleshy organs in a state of suspended vitality, but not green and actively growing plants. All attempts to inoculate the latter with *B. amylobacter* have failed.

Potato scab is an affection of the tubers, whereby the skin becomes abnormally hard, thick, and brown. The surface becomes rough and cracked, and pieces flake off, so that the market value of the tubers is much diminished. The cause is an excessive growth of the layers of cells just under the most superficial layers, which are consequently being continually pushed off. It has been attributed to excess of moisture, too rich manure, and other causes. H. L. Bolley, in the United States, has demonstrated, in the layer between the still sound tissue and the dead surface layers of scabby tubers, the constant presence of a short bacillus, which he has shown to be the cause of the disease. Bolley made gelatine cultures, and used them to infect healthy tubers in his experiments. Infection was readily accomplished by inoculation through a small wound, or by merely wetting the tuber with the culture. The bacillus never penetrates deeply into the tuber, and is aërobic, in contrast to *B. amylobacter*, which is anaërobic. It lives in the protoplasm and cell sap, and the irritation set up by the bacillus excites the abnormal growth of the cells immediately beneath the diseased layer.

In many parts of the north and centre of France the tomatoes have been devastated by a disease which attacks and rots the fruit during its growth. The young tomato becomes brown above, the discoloration spreading from the insertion of the style on top of the fruit, and the whole finally rots. The cells of the infected fruit contain quantities of bacilli 0.6–1μ long and 0.3–0.5μ broad. In artificial culture these do not form chains, but group themselves into fairly compact gelatinous masses. The infection probably occurs through the style in the flower, although experiments made by placing drops of a broth culture on the style were negative in result. Infection was easily accomplished by inoculation of young fruits.

A disease known as Gummosis of vines was first observed in Italy in 1879. Garovaglio concluded that the alterations he observed were due to a bacterial infection, and this has since been confirmed by Comes, Baccarini, Cugini, and other Italian botanists. The stock of the affected vine grows stunted, the young shoots do not take on their normal growth, and the leaves are deformed generally by the presence of deep notches. Sometimes, again, a quite green plant will suddenly dry up prematurely from the same cause. On transverse section of an affected stem the wood is seen to be dotted with black spots. These increase in number, enlarge, and run together into larger areas, finally becoming of a brown colour, like rotten wood. The disease generally begins at pruning scars, and descends to the roots. Microscopic examination shows all the elements of the wood, but especially the vessels and wood-cells, to be full of a brown gummy material, teeming with bacteria. These are short and motile, and when cultivated on broth, or gelatine and prune juice, form leptothrix filaments, segments of which, when separated off, form bacilli about 1μ length, which are actively motile. Experimental infection of healthy vines with cultures of the bacilli were successfully carried out; and in the following year the plants which had been inoculated showed the characteristic lesions of the stem and leaves. Young grafts and old stocks alike may be attacked, and the disease certainly gains access to the stem through the scars left by pruning, but may also be spread by budding and infected grafts which have been used to rejuvenate vineyards devastated by the *Phylloxera*.

Bacterial Gummosis also affects hyacinths, giving rise to a condition long known to Dutch florists as the "yellow disease." This, according to M. Wakker, is due to a micro-organism which he calls *Bacterium hyacinthi*. It attacks not only the resting bulbs, as has been shown in the case of *B. amylobacter* and others, but also, unlike it, the leaves in full vegetative activity. On transverse section, in the autumn, of a bulb not as yet very seriously attacked, a number of yellow points are seen on the fleshy layers of the bulb, arranged in lines which correspond to the vascular bundles. The vessels of the latter are filled with a thick yellow slime; sometimes they are partly destroyed, the only remains left being fragments of spiral tracheides, the wood having been almost entirely eaten away and replaced by slime. Round the last remains of disorganised tissue in the yellow slime is found a prodigious quantity of bacteria, each 2-5μ long and 0.25-0.5μ broad, which, according to Prillieux, are to be considered a separate species.

All the bacteria in the slime are non-motile, but they become actively motile immediately on adding a little of a 0.75 per cent. solution of NaCl. They are frequently to be seen in process of division. In spring, when the flowers appear, yellow lines are seen on the stalks and leaves, which start at the lower portions, and became less distinct towards the upper parts. Here, again, one finds the vessels full of the slime, with its hosts of bacteria. In the leaves not only the vascular bundles are attacked, but ultimately all the soft tissues become involved, and nothing but the epidermis separates the slime from the outside air.

It has been observed that in several diseases of plants the alteration in the tissues of the affected parts is accompanied by the production of a gummy material. This has been observed in the stone-fruit trees, in the olive, mulberry, orange, and vine, and, according to M. Comes, is due to a specific germ which has been called *Bacterium gummis*, and which Prillieux considers to be the cause of all gummy degeneration of tissues.

The branches of olive trees in Italy and France are often seen covered with woody tumours ranging up to the size of a walnut, the surface being rough, wrinkled, and cracked, and the centre somewhat depressed. The branches which are affected dry up and die, and the growth of the whole tree becomes sickly.

The true nature of these tumours can best be ascertained by examining one in its earliest stage, when about 2 m.m. in diameter. Such are easily found on the young shoots. On section these are found to be composed of soft cellular tissue, like wound parenchyma—*i.e.*, round cells full of granular protoplasm. Here and there are short cells with walls thick and dotted. At the top of the little tumour the tissues are brown, dead and dry, and cracked on the surface. The dead tissue shows large, irregular cavities communicating with one another and filled with a white opaque substance, which consists of nothing but a great mass of bacilli, which do not form globular colonies as in the similar tumours which occur on the Aleppo pine. Below the dried up portions, in the still living tissues, small colonies of the same bacilli may be found, but only occupying two or three cells. At the edges of the cavities the cells are visibly changed, their walls being broken down and of a yellow colour: but at a little distance the growth of the cells is much increased, and we find small cells filled with protoplasm, which multiply very rapidly. The bacilli disintegrate the neighbouring cells, and thus penetrate rapidly through the tumour tissue, causing it to necrose centrifugally; but the dead parts are surrounded by a ring of living tissue which the irritation of the bacilli has stimulated to extraordinarily active growth. The soft cellular tissue of the tumours finally becomes hard and woody, becomes split into lobes, and ultimately dries up. The trees which are thus affected yield little or no fruit.

M. Sevastano artificially reproduced the disease by the inoculation of cultures. A puncture was made down to the cambium layer with a needle. Another needle, dipped in a culture made from a tumour, was then inserted into the puncture. Four inoculations on each of three plants produced twelve tubercles, identical in every respect with those formed naturally. Somewhat similar tumours to those described on the olive have been observed in central France to attack the Aleppo pine, the woods over an area of 12 hectares (30 acres) being threatened with destruction from this cause. The trees present a withered appearance. The tumours are larger than those of the olive, being as big as a hen's egg. At first smooth, they later become cracked, but less so than those of the olive. Their structure is similar, and the process of destruction the same, but the growth of the small cells round the spaces is much more active in the pine than in the olive. Each space is surrounded by a sort of aureole of small, very young cells, filled with a granular protoplasm, and containing a very large nucleus, which soon, however, become the prey of the bacteria. The latter have been designated *B. pini*, and they differ in form and size from *B. oleæ*, and especially in forming distinct globular colonies (zoogloea) in the interior of the tumours.

A disease has been observed in France to attack the stems of potatoes, spreading upward from the ground. The cells of the stem become depressed, and their walls a dark brown. The diseased part forms a constricted ring on the stem or deep vertical furrows, and the infected plants quickly die. The brown cells are found to be full of millions of whirling bacilli, 1-5μ long and 0.3-0.5μ broad, and which have been called *B. caulivorus*. When cultivated in veal broth or gelatine it is characterised by a green colour which is strongly marked, but becomes more intense on shaking. Potato plants grown from cut tubers seem much more liable to be attacked. Especially the variety known as "Richter's Imperator," an expensive kind, but valued on account of its very large yield, suffered seriously from this disease, as the farmers used to cut the tubers very small in planting, for the sake of economy. *B. caulivorus* also attacks pelargoniums, clematis, begonias, and gloxinias.

On hot-house vines in the north of France, more rarely on wall vines, a disease has been observed, characterised at first by the appearance on the stem of light, buff-coloured spots, which slowly become more distinct. These spread, and finally penetrate the entire thickness of the stem, when the fruit situated above the point of attack becomes dried up. When the disease appears early none of the grapes mature, and the loss is considerable. In the cells are to be found numbers of motile bacilli, cultures of which greatly resemble those of *B. caulivorus*, but the greenish colour is less marked. The two forms are probably identical.

A disease which has caused extensive ravages in Russia, Austria, France, and Germany has been called Mosaic Leaf Blight of tobacco. The shoot becomes discoloured in patches; these spots dry up and form greyish yellow areas, the border of which is composed of corky cells, which limit the focus of infection. In the cells of these spots are to be found short bacilli which in cultures form chains. The culture medium becomes yellow, but never turns green.

Boyer and Lambert have demonstrated a disease of young mulberry trees due to a bacillus which has been called *B. mori*. It causes the development of the shoots to be arrested. Brownish-black spots appear scattered over the under surface of the leaves and branches. They are generally elongated and depressed, forming ulcer-like hollows more or less deep, sometimes extending to the pith. The disease often begins at the distal extremities of the shoots, which look as if they had been burned to a distance of several cms., and are bent like a crozier. The *B. mori* forms dense colonies which are limited by the cells, which are turned brown and killed by the parasites.

Sometimes the infected areas are separated off by a corky zone forming a sequestrum.

Artificial cultures produced hemispherical colonies, at first white and hyaline, afterwards becoming yellowish.

The apple and pear are subject to a necrosis of the bark, which was observed in Illinois by Mr. Burrill, and the cause shown to be *Micrococcus amylovorus*. It destroys the bark, spreading gradually over the affected branches, then to the trunk, finally destroying the whole tree. The micrococcus attacks the cell contents, especially the starch, and gives off CO_2 and butyric acid. Experimental inoculation reproduced the condition. Peaches and poplars are also attacked, but the disease has not hitherto been observed in Europe.

The Black Rot of cabbage has been known for some years in the United States, and has recently been detected in England. The symptoms of the disease are a one-sided growth of the heads and a yellowness of the leaves, which also appear to have "burnt edges." Sometimes the heads rot and fall off, or no heads may be formed at all. The disease is caused by a yellow bacillus (*Pseudomonos campestris*) which enters the plant at the margins of the leaves, through the water-pores on the teeth of the leaf margin. Slugs and caterpillars spread the disease by creeping alternately over diseased and healthy plants, and thus spreading the infection. Rotation of crops is the best means of ridding the soil of the pest. Care should be taken not to allow cruciferous weeds to flourish, as they continue the disease, and the benefits of rotation of crops are lost. Slugs and cabbage-feeding caterpillars should be kept in check, and diseased plants should not be allowed to be thrown on the manure-heap, but should always be burned.

A few words about prophylaxis and treatment of these diseases may not be out of place in conclusion.

In pruning trees antiseptic precautions should be taken. In the case of districts affected by the Bacterial Gummosis of vines the following plan was found successful:—The excision and destruction of all diseased parts, and the application to all wounds of a strongly acid solution of sulphate of iron or sulphate of copper, followed by a coating of coal-tar. Badly infected stocks should be removed and burned. Grafts and cuttings from nurseries where the disease has prevailed should be strictly avoided. All diseased plants, fruits, and bulbs should be burned, and not thrown on the manure-heap, as is so commonly done, which means securing a recurrence of the disease.

Spraying with a dilute solution of potassium sulphide, or Bordeaux mixture, will often cure slight outbreaks of disease among plants, and will certainly prevent healthy plants from becoming infected. Bordeaux mixture consists of- -water 50 gallons, copper sulphate 6 lbs., unslacked lime 4 lbs., soft soap 6 lbs -the whole to be thoroughly mixed.

Cuttings, bulbs, tubers, or even seeds from diseased plants, should not be used. Plants of the same kind should not be massed together when circumstances permit. Broken branches should be nicely trimmed and the stumps immediately protected by a coating of coal-tar.

Rotation of crops and the growing of "trap-crops" are invaluable where the soil has become badly infected by resistant spores of disease. A "trap-crop" means a quickly-growing crop of a plant very susceptible to the disease which it is desired to eradicate. It is sown early in the season, the plants become diseased, and are then removed entirely before the parasites have time to form their resting spores. The trap-crop is, of course, burned, but the soil will be then found to be free from the disease infection. Finally, co-operation is necessary. It is no use spending time and money to keep your crops free from disease if your neighbour on the other side of the hedge, whose plants are suffering from the same disease, does not take any precautions whatever.

Above all, continual investigation of the true causes of these diseases is necessary before effective measures can be taken to eradicate them, and the agriculturist must be educated to understand the reason why these precautions are necessary. The part played by bacteria in plant diseases is as yet but little worked out, but what has been done in vegetable pathology hitherto is a striking example of the enormous economic importance which must be attached to the proper study of general biology.

ART. XIII.—*The Use and Abuse of Alcohol.*[a] By R. J. KINKEAD, M.D., Dub.; Professor Queen's College, Galway.

(*Continued from page 251.*)

So wonderful are the natural recuperative powers that men generally recover from the effects of a drunken debauch, but if frequently repeated, if alcohol be habitually taken, even in quantities generally regarded as moderate, then sooner or later grave organic mischief shall ensue.

Usually, however, prior to such structural change, alteration of function arises, the moral sense is perverted, and regard for truth is lost. Other evidences of nerve failure soon show themselves: sustained exertion, mental or physical, becomes irksome or impossible, emotional variability is marked, and without sufficient cause tears flow, maudlin affection or gusts of passion are exhibited, muscular precision is affected, the tongue trembles, the hands shake, there is a feeling of depression, sleep is disturbed, and eventually is lost, appetite fails. "Oh, monstrous, but one halfpenny worth of bread to this intolerable deal of sack."

This, and the further stage of *delirium tremens*, may result from a debauch, but more usually follows continued excess. "In those who are affected with this sort of alcoholic disease a mixed madness and sanity is established, in which the cunning of the mind alone lives actively with the vices that ally themselves to it."

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[a] A lecture delivered before the Literary and Debating Society of the Queen's College, Galway, on March 2nd, 1906.

While these are the inevitable, deplorable, consequences of the *abuse* of alcohol, it by no means follows that inebriety is in the majority of instances the result of its habitual *use*.

Healthy persons do not need and are better without it, but they can and do use alcohol without injury.

The proposition that the habitual drunkard is the product of the custom of using stimulants, that if alcohol be taken, at first in moderation, a craving is created for larger and larger doses, until, finally, the drunkard is developed, is not merely not proven, but is contrary to the experience of the world.

Undoubtedly inebriety is frequently caused by the custom of drinking, especially of treating. "It cannot be concealed," says Dr. Chambers, "that even without infringing on high health alcohol in small divided doses and between meals--dram-drinker fashion—deranges the metamorphosis of tissue, and in the direction of arrest. And persistence in the habit must lead in the end to permanently-diminished organisation, degeneration, and atrophy."

"If they take spirits of a morning never let them hope for success in undertakings—both body and mind will be incapacitated, life shortened, and all the keenest joys taken out of what remains.

"Drinking between meals renders a man less fit for his daily work and is a dangerous downward movement towards the abyss of dram-drinking. The most certain victims to alcohol are those who are always sipping."

It may be hospitable to offer a friend or visitor a drink: it is certainly an abuse of hospitality, as well as a breach of good manners to endeavour to make him accept one if he does not want to, and if he be an inebriate or has a tendency that way it is not hospitality but a crime. The frequent "peg," the repeated response to "have a drink, old fellow," is as dangerous as fooling with a rattlesnake or sitting on the safety-valve of a steam engine.

The question then naturally arises, Why do men and women drink?

> "If on my theme I rightly think,
> There are five reasons why men drink—
> Good wine, a friend, because I'm dry,
> Or least I should be by and by,
> Or any other reason why."

It is well to look facts in the face. Most persons drink because they like it. Undoubtedly alcoholic beverages are pleasurable to the palate, and their exhilarating effects are agreeable. The wise man enjoys this as all other pleasures in moderation. "He will be most sparing in the consumption of spirits, and as for wines he will reserve them for festive occasions. The man who wishes to enjoy life will make his use of alcoholic beverages always exceptional, for as idlers have no holiday, so perpetual feasters miss all pleasure of variety."

The thirst for alcohol, the acquirement of habits of excess, depend, however, in most instances, on physical defects, either inherited or acquired. The predisposition to drink, implying a need in the system for stimulant or sedative, may arise from hereditary neurosis, from habitual use or abuse of alcohol in childhood or youth, from nerve exhaustion, from excessive and prolonged mental or physical exertion, from disease, starvation, depressing influences, sudden mental shocks, profound and continued emotional excitement, unhealthy surroundings and insanitary dwellings "Next to the urbanisation of the people," says the Inter-Departmental Committee on Physical Deterioration, "and intimately associated with it, as the outcome of so many of the conditions it creates, the question of 'drink,' occupies a prominent place among the causes of degeneration. The close connection between a craving for drink and bad housing, bad feeding, a polluted and depressing atmosphere, long hours of work in over-heated and often ill-ventilated rooms, only relieved by the excitements of town life, is too self-evident to need demonstration, nor, unfortunately, is the evil more open to dispute. People who have not enough food turn to drink to satisfy their cravings—the poor often drink to get the effects of a good meal. They mistake the feeling of stimulation after alcohol for the feeling of nutrition. Alcohol has a specially harmful effect upon growing tissues, and therefore upon child-life. Alcoholic habits among women were particularly deleterious, for if both the father and the mother were given to alcohol the progeny would deteriorate in every way."

In many, if not most cases, it is not the stimulating so much as the anæsthetic action of alcohol that proves an almost irresistible attraction.

The excitable, unstable, state of the emotional and nervous system of the neurotic, the wearied worker, the underfed, the worn out votary of pleasure, the gambler, the voluptuary, the society woman living in a whirl of excitement, the mourner, the wife, or sister, or daughter exhausted perchance by long nursetending, the never-ceasing round of household cares, by pain or domestic trouble, cries for rest. Can you not fancy such an one saying, I am tired of—

"Life's endless toil and endeavour,
And to-night I long for rest.
Such 'draughts' have power to quiet
The restless pulse of care,
And come like the benediction
That follows after prayer.
And the night shall be full with music,
And the cares that infest the day
Shall fold their tents like the Arabs,
And as silently steal away."

Can you wonder that the temptation is so often yielded to; nay, when we consider the attraction to the sufferer of securing, be it only for a brief moment, an interval when the wicked cease from troubling and the weary are "at rest," the wonder is that any are strong enough to resist.

Bearing in mind that the battle is not momentary, that victory once won the campaign is over—on the contrary, that it is an unceasing daily and hourly struggle, severest in moments of weakness, not alone with self but too often against the injudiciousness of relatives or friends—I protest that the victor is more worthy of honour than the hero who wins the Victoria Cross.

"The continuous and victorious struggle of such against their enemy, an enemy the more powerful because ever leading its treacherous life within their breasts, presents such a glorious conflict, such an august spectacle," as enables us to realise how there is joy in heaven over one sinner that repenteth more than over ninety and nine temperate persons who need no repentance.

While I do not believe that human beings can be made sober, or that the sale of intoxicating drinks can be prevented by Acts of Parliament, yet much can be done by legislation. Good has been effected by statutes directly dealing with the sale of alcoholic beverages, and by those, indirectly having a very important influence on the tendency to inebriety, which enable local bodies to remove predisposing causes and to change the environment.

The spreading a net for the feet of the weak and unwary by the multiplication of public-houses has been prevented in Ireland for a limited time. No effort ought to be spared to have this Act made permanent.

The law has given power to the inebriate to voluntarily seclude himself in a licensed home, and to Courts, to compulsorily seclude habitual drunkards who have committed offences against the law.

These provisions are steps in the right direction, but defective, not reaching the most urgent cases, in which the inebriate refuses to go into a home—for unless he commits a crime there is no power to compulsorily seclude him—and because the expense places residence in a home beyond the means of the non-criminal poor and of persons of small incomes.

The object of seclusion is the treatment of a diseased condition. The necessity for it arises from the fact that treatment is useless as long as the poison is imbibed. Seclusion in a properly equipped, well-regulated institution appears to be the only way that alcohol can be kept from inebriates, or they from it, and because it also breaks up the old environment.

Environment furnishes the elements of mental nutrition, and hence largely determines the mental, moral, and physical growth: if in the case of inebriates it remains permanent improvement can hardly be looked for.

The exercise by local bodies of the powers conferred on them of breaking up insanitary areas, providing sewerage, pure water, air spaces, and recreation places in towns, compelling the removal of refuse, the erection of healthy, comfortable houses for artisans and labourers, in short, of securing, as far as possible, that our people shall have sound minds in sound bodies, indirectly but efficiently aids the cause of temperance.

How truly economical such outlay is—apart from its moral or social importance—is demonstrated by Dugdale's researches, showing the damage to the community by intemperance:—

"Over quarter of a million of loss in seventy-five years, *caused by a single family,* without reckoning the cash paid for whisky, or taking into account the entailment of pauperism and crime of the survivors in succeeding generations, and the incurable disease, idiotcy and insanity, growing out of the debauchery, and reaching further than can be calculated."

The duty, however, of combating intemperance cannot be left solely to the State or to local authorities. The initiative, the impelling force, must spring from the voluntary action of the people, illuminated by an instructed public conscience.

The temperance movement is generally confounded with total abstinence, which seeks to prevent intemperance and to reclaim the drunkard by inducing both the sober and the inebriate to take a pledge to abstain from all alcoholic drinks.

It is not, and never can be, a universal panacea.

The vast majority of the population are sober without being total abstainers, and naturally object to being forced to give up what they consider does them no harm, and may justly reply, "Dost thou think because thou art virtuous there shall be no more cakes and ale?"

It fails, it is as powerless as punishment in the most urgent cases: necessarily so, for it depends for success on the will and power of self-restraint of the subject, that is, on those powers of mind which are weakest in the inebriate. It assumes that those who have not will power enough to keep sober, either from a sense of what is right or from fear of consequences, shall be enabled to do so by taking a solemn pledge.

The field for total abstinence is, however, a large one, and if it were advocated on physiological, rather than on moral, grounds, it would, I believe, be more readily accepted.

No one hesitates to say, I won't drink this, or I won't eat that, because I'm rheumatic or gouty, or have a tendency to corpulence, or an uncertain digestion, or a fastidious "little Mary," but people do hesitate to become or admit they are total abstainers because they think it implies either setting themselves up as examples to weaker brethren or that it is a necessary personal precaution, and therefore an admission of moral weakness and lack of self-control.

Too much attention has been focussed on the moral disasters, and too little directed towards the physical defects arising from the abuse of alcohol.

No reasonable person ought to give children and young persons alcoholic beverages, yet many do so from ignorance of the action of alcohol on the system, and from the mistaken belief that they are good for them. Convince them that in any shape or form alcohol is detrimental to the growing brain, that it injuriously interferes with bodily development, and, unless fools, they will cease the practice. The custom of recommending it to young people and women as a remedy in hysteria, hypochondriasis, neuralgia, and allied disorders. or to relieve debility or the fatigues or worries incidental to daily life, cannot be too strongly protested against. Persons of a nervous temperament, of a neurotic inheritance, or in whom, from any cause, such conditions of nerve exhaustion or irritability, or such defects of nutrition, have been produced that work becomes irksome or impossible, ought never to touch alcohol, for in such cases a desire for sedative to induce sleep or calm irritability, for stimulant to spur the jaded system, is developed, and hence the histories so frequently repeated of hitherto hard-working, steady, sober persons suddenly becoming habitual drunkards.

Whether inebriety arises from inherited or from acquired defects, *total abstinence from alcohol is essential.* There is no middle course; an inebriate *cannot* drink in moderation.

As regards the healthy, the physiologically sound, ignorance can be swept away; misconceptions can be dispelled. They can be taught the truth, that especially in youth they do not need alcohol, but are far better without it. That so far from enabling work to be done and aiding endurance it has the contrary effect: it is not, except in exceptional cases, a source of force, and its direct action is arrest of vitality. In a healthy man it can but weaken nerve power, while at the same time it lowers bodily temperature, which contributes much to the capacity for muscular exertion.

The human organism is so constituted that it cannot be driven to perform its functions by means that simply stimulate without supplying some new force to take the place of that put forth by the body under the impulse of excitement.

"The unhappy adoption of the word 'stimulant' has demoralised the notions of civilised communities on this head, and led them to reckon on priming themselves up to unwonted strength with anæsthetics."

It follows, therefore, as a logical conclusion, as certain as the day the night, that alcohol prevents that perfect co-ordination of mental and bodily functions of energy and activity, which we sum up in the term "being fit."

Sir Frederick Treves remarks:—"I am very much struck with one thing, and that is how very many professional men who work hard all day have discontinued the use of stimulants in the middle of the day. And why? For no other purpose except this one thing, they found it impossible to work with it."

This agrees with experiments made during the first Ashantee campaign. Rations of rum were issued during the advance, at the mid-day halt, to some companies and not to others, and the result was carefully noted. It was found that the companies that got the ration, on the route being resumed, were able to out-march the others for a few miles: they then began to fail, and were either not able to accomplish the distance traversed by those that did not get it, or, if they did, came in exhausted. On the other hand, a rum ration proved beneficial if issued at the termination of a long, harassing march, or after prolonged exertion.

After the cessation of work expenditure of force continues for some time; a dose of alcohol, by stopping the waste of force, conserves energy.

If, therefore, alcohol be taken it should be only with food and after the day's work is done.

I have emphasised the fact that there is a large class, including children and young persons, who should not take alcohol at all. While recognising that this may be hard, and that it demands self-denial, yet I fail to see why the necessity for abstaining from alcohol should be regarded as in any way different from the necessity of abstaining from anything else. There is not one of us who has not, for one reason or another, to leave undone what we would have liked to have done—to abstain from some food, or beverage, or pleasure, or pursuit, on grounds of health, or from the *res angusta domi*, or to please some one we love and respect, or because it is right. We have all to resist the seductions of the Sirens, not like Ulysses, tied to the mast, or with stuffed up ears, but as free men, masters of ourselves, practising that self-control and self-denial, because it is right, because it is our duty to ourselves and others, which raises and ennobles mankind, and which, however difficult at first, like all other things becomes easier by habit. The abstainer from alcohol does no more or no less. We others, if we imbibe alcoholic beverages, should admit that we do so not because they are necessaries, but as luxuries, because they are pleasant to the taste, and if they are good of their class, and taken in moderation, add to the enjoyment of life when the superabundant energy and keen appreciation of youth has faded away.

We must, however, confess that absolute safety rests with those who reject stimulants more potent than tea or soda water, that there is risk in indulging in any intoxicant—"in the light that lies in woman's eyes," as well as in that which sparkles in the flowing bowl. That moderation and extreme caution are required if the invitation be--

> "Drink to me only with thine eyes
> And I will pledge with mine,
> Or leave a kiss but in the cup
> And I'll not ask for wine."

As well as when

> "With laugh and jest we sip
> The wine cup's rich carnation,
> Whose bursting bubbles seem to tip
> The wink of invitation."

And now, apologising for having detained you so long, I shall lay before you as a final, and what some of you may think the most powerful argument I have produced against the abuse of alcohol—

> "That joy, temperance, and repose
> Slams the door in the doctor's nose."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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Physiology of the Nervous System. By J. P. **Morat**, of the University of Lyons. Authorised English Edition. Translated and Edited by H. W. **Syers**, M.A., M.D. With 263 Illustrations. London: Archibald Constable & Co. 1906. Pp. 680.

This volume, we are told, forms that part of the Treatise of Physiology by Professors Morat and Doyon which is devoted to the functions of innervation. If the remainder of the treatise is carried out on the same scale it will be a truly stupendous work. The part before us is a volume of nearly 700 large octavo pages, a great deal of it printed in small type, and deals with its subject in a very exhaustive manner. For the excellence of the work the name of Professor Morat is sufficient guarantee, and, as the translator says, "there can be no doubt that this volume embodies the latest advances in our knowledge of the nervous system and portrays the most recent views and ideas on this very intricate branch of physiology."

Such a work as this is manifestly unsuited for analysis. Although it abounds in original matter it is mainly an account of the present condition of knowledge of the nervous system, the result of the work of the numerous labourers in this field of science. But everywhere the observations, experiments, and theories of the different writers are criticised, collected, and arranged so as to form a continuous whole.

Professor Morat holds firmly by the neuron theory, and begins his work by chapters on the statical and dynamical conditions of the neuron, or the anatomy and physiology of this nervous element. Then he treats of what is commonly called general nerve physiology, the electrical condition of the nerve in rest and activity, electrotonus, fatigue, the laws of muscular contraction when the nerves are electrically stimulated, nerve poisons, and so on.

In the second part, under the heading—The Relations of Sensibility and Movement, he describes the spinal and cranial nerves, their origins, connections, distribution, and functions. The descriptions are illustrated by admirable drawings, most of which are in colour.

In the following chapter, on primary systematisations, an account is given of the reflex act, inhibition, and what the author speaks of as nervous circulation. Basing himself on the centrifugal fibres which have been detected in the retina, olfactory bulb, and other places, he holds that the sensory and motor nervous elements communicate not only at one end but at both, not only in the centre but at the periphery, and that the nervous impulse circulates round and round in this closed circuit. It is by this means that the retention of the impulse is rendered possible. "An external tie, *peripheral*, thus connects, in its turn, sensation to movement, and makes it to depend upon it. The cyclic system, thus primed, continues to act functionally by itself. Its losses through excitation are minute, its expenditure of energy is extremely feeble, and is compensated by the exchanges effected with the blood circulating in its vessels." The theory, although, as is admitted, incapable of experimental proof, is attractive.

In the same chapter a classification of nerves is given, and their different functions are discussed. As regards trophic nerves we read—"In short, the so-called *trophic nerves are not only* like the so-called thermic nerves, *those which promote the special function of the organ to which they are distributed;* they are, histologically speaking, the same fibres. It must be assumed that these exciting nerves are distributed to all the fixed elements of the organism, at any rate to the greater number of them. Where the function is obvious, they appear to be both excitors of function and regulators of nutrition. Where the function is unknown or dissimulated, they appear only as trophic nerves. It is this which has given rise to the belief that there are distinct and independent nerves specially devoted to nutrition." The muscles and glands on the one hand, and the skin and cornea on the other, may be taken as examples of organs where the function is obvious and where it is obscure.

In the next chapter, under the heading Consciousness and Unconsciousness, the spinal cord, sympathetic system, and medulla oblongata are described both anatomically and physiologically. As in a former part of his work the author shows that the opposition between sensation and motion is not absolute, but that they overlap and shade one into the other, so here he maintains that it is the same with the conscious and unconscious nature of certain acts or functions of the nervous system. "There is an *obscure* consciousness of being which does not analyse either the forms or the movements or the causes of these movements; this is never absent from our organs so long as they are attached to the nervous system as a whole, and we may conclude that it exists to some extent in the separate cellular elements; it is a form of unconsciousness which is practically only sub-consciousness. There is a *definite* consciousness of being which is sharply defined from that which surrounds it, and furnishes it with the forms, the qualities, and the movements which come in relation with it from the external world; this is the perception of the Ego, consciousness properly so-called."

The following chapter, headed Superior Systematisations, is divided into four sections:—(1) Orientation and equilibrium; the cerebellum. (2) The emotions; optic thalamus and corpora striata. (3) Intelligence; the brain. (4) Cerebral localisations—this last being subdivided into localisations in consciousness, or what we commonly speak of as motor and sensory centres, and into localisations in unconsciousness, or those parts of the brain which influence the organic functions, as respiration, circulation, digestion, secretion, and the genito-urinary organs. This section on the brain abounds with valuable critical observations on the work of the numerous experimenters who have occupied themselves with the study of cerebral localisation of function, so many of whom belong to this country.

Under Specific Innervations the special senses are described—tactile, visual, auditory, olfactory, and gustatory innervations.

The last chapter deals with language and ideation. Here sections on aphasia, sleep, hypnotism, and spiritualism find their places.

It will be seen that the work is of the most comprehensive character, and is characterised throughout by thoroughness, great judgment, and fairness, and the subjects are invariably treated in an eminently philosophical spirit.

It is no light task to translate a work of such a size and complexity as this, and in the present case we must congratulate Dr. Syers on the success which he has attained. There are a few slips, some of which have evidently arisen from imperfect revision of the proofs. On page 319 we read that stimulation of the cervical sympathetic causes secretion in the sudoriparous glands of the *groin* of the pig. The French word groin, meaning snout, is now never used in English, although it was occasionally so employed two hundred years ago, and there is no reader, unacquainted with French, who would understand groin to mean anything but the cruro-abdominal region. On page 536 the tongue in cases of hemiplegia is said to deviate to the side of the injured hemisphere. And on the previous page we read that the twisting of the tongue to the right is produced by a combined action of the protrusor muscle of the right side and of the retractor of the left. On page 126 Sir Charles Bell is made to describe the posterior roots of the spinal nerves as tracts directly connected with the *cerebrum* by the restiform bodies. In speaking (p. 141) of the efferent elements in the posterior roots we read centripetal for centrifugal. We have marked several other oversights of this kind, but notwithstanding these and an occasional obscurity in the meaning of some passages, we must express our gratitude to the translator for making this valuable work accessible to English readers, and our appreciation of the skill and judgment with which he has accomplished his task.

The Teeth and their Care. By THADDEUS P. HYATT, D.D.S., Brooklyn. New York. 1906. Pp. 96.

RECENTLY a number of short treatises dealing in a popular style with the simple rules for preserving the teeth from decay have appeared in this country. They supply a manifest want. The little book before us proves that our neighbours across the water have also found the need for educating the American public in the same direction. The author has filled the pages of his book with excellent material, conveying within a small compass information of which the parent cannot afford to be ignorant, while excellent illustrations enhance the value of the text. Unhesitatingly we commend this little book to all whom so important a matter at all concerns

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The Extra Pharmacopœia of Martindale and Westcott. Revised by W. HARRISON MARTINDALE, Ph.D., F.C.S., and W. WYNN WESTCOTT, M.B. Lond., D.Ph., H. M.'s Coroner for North-East London. Twelfth Edition. London: H. K. Lewis. 1906. Med. 24mo. Pp. 1075.

PERHAPS it was unavoidable that the twelfth edition of this most useful and instructive work should have grown in size by 250 pages—nearly one-quarter of its former dimensions. Since the eleventh edition appeared in 1904 several new standard works of reference have been published. A revised United States Pharmacopœia became official on September 1, 1905. The seventh edition (1905) of the Farmacopea Española, the eighth edition (1906) of the Pharmacopoea Austriaca, the fourth edition (1906) of the Pharmacopoea Nederlandica, and the third edition (1906) of the Pharmacopoea Belgica have all been laid under contribution in the preparation of the new "Extra Pharmacopœia." The authors have even consulted a new French Codex which has not yet appeared!

Dental therapeutics receive due attention, and the subjects of organo-therapy, antitoxins and serum-therapy have been brought up to date, the latest views on opsonins being described at pages 786, 787, and 788. The questions of the standardisation of galenical preparations and of the physiological standardisation of certain drugs—for example, digitalis, strophanthus, ergot, and Indian hemp—have been carefully considered. Radiology receives notice in a special section, which is followed by a very full account of radium—the personification, so to speak, of radiology. Lastly, the valuable "Therapeutic Index" has been re-arranged and extended.

The "Extra-Pharmacopœia" is a work which is indispensable to the physician or surgeon who wishes to keep abreast of modern therapeutics; and its reputation wanes not, but grows with the publication of successive editions.

The Dublin University Calendar for the Year 1906-1907. To which are added the ordinary Papers set in the year 1905-06. Vol. I. Dublin: Hodges, Figgis & Co. 1906. 8vo. Pp. vii + 76* + 428.

THIS volume appeared in good time during the Long Vacation, and contains the usual full information as to the ordinary and honour courses in Arts and in the Professional Schools, as well as the papers set during the past academic year at the ordinary term examinations for undergraduates. The second volume of the Calendar for the year 1906-1907 will not be published until January next.

In the first part of the volume the rules respecting examinations for the recently-established Qualifications in Education will be found. This part also contains the regulations for the new University Diploma in Economics and Commercial Knowledge, and an account of the lately-established School of Agriculture. All these additions show how energetic the heads of the University are, and how fully alive they have become to modern educational needs.

We observe an unaccountable omission in the lists of prizes awarded by examination in connection with the School of Physic in Ireland. No mention is made of the Edward H. Bennett Prize in Surgery recently founded by his friends and former pupils, or of the corresponding Prize in Medicine, of founding which Sir John Banks, K.C.B., *clarum ac venerabile nomen,* has declared his intention.

The volume is well brought out by the University publishers, and reflects credit on the University Press.

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D., New York, and CLAUD WORTH, F.R.C.S., Eng. 8vo. Pp. 400. London: Baillière, Tindall & Cox. 1906.

THIS admirable handbook has for its authors two such well-known exponents of ophthalmic work that the success of the volume should be assured. The authors have presented to their readers a precise, practical, and systematic manual of diseases of the eye, intended for the student and the general practitioner of medicine. An attempt has, they say in their preface, been made to give the fundamental facts of ophthalmology, and to cover all that is essential in this branch of medicine, always keeping in mind that the book has been written for students and general practitioners. Space, therefore, has been allotted as, in their opinion, the necessities of such readers require. Thus, rare conditions have merely been mentioned, uncommon affections, of interest chiefly to the specialist, have been dismissed with a few lines, and common diseases, which the general practitioner is most frequently called upon to treat, have been described with comparative fulness.

There are a large number of original illustrations, both coloured and uncoloured. The coloured plates of external diseases and ophthalmoscopic appearances are, with a few exceptions, very excellent, and together form a fairly complete atlas.

The book is nicely written in very readable English, clearly expressed, and is, in our opinion, a very useful addition to the list of students' text-books.

RECENT WORKS ON DIGESTION.

1. *Treatment of Diseases of the Digestive System.* By Robert Saundby, M.D., F.R.C.P.; Professor of Medicine in the University of Birmingham. London: Charles Griffin & Co., Ltd. 1906.

2. *Food and Digestion in Health and Disease during Infant, Child, and Adult Life.* With an Introduction on the Nature of Matter and the Phenomena of Life, and an Account of the Source, Properties, and Influence of Water. By M. A. Dutch, M.D.; Diplomate in Public Health and Sanitary Science, University of Cambridge; Fellow of the Royal Institute of Public Health, London, &c., &c. London: Henry Kimpton. 1906. Cr. 8vo. Pp. 244.

1. The author designates this little book a Guide to the Principles and Practice of the Treatment of Diseases of the Digestive Organs, and as it is based on his own personal experience, and is, therefore, we may presume, a reflex of his own practice in a line in which he has gained special distinction, it possesses a value out of proportion to its size. Taking the book as a whole, one is at once struck with the simplicity of the treatment advocated for many diseases, and with the absence of any elaborate detail of chemical analysis adopted in diagnosis, the volume contrasting strongly in these respects with the German and American works on the same subject. Apparently, however, the author has arrived at his present attitude with regard to such elaborate therapeutic remedies and diagnostic aids as intragastric electrisation, gastric sprays, gastro-diaphanes, gastroscopes, and the like, by finding after a trial of them that he got just as good results and arrived at just as good a diagnosis without employing them. This is, indeed, the general opinion of British physicians, who are rightly sceptical concern-

ing the value of scientific novelties and toys, but if adopted in too uncompromising a fashion, it unfortunately has a tendency to limit our progress and to land us in the inevitable rut. Thus, while far from suggesting that any such fate has befallen the author of the present volume, it is impossible to read through what he has written without feeling that here and there a little more enterprising treatment might be advocated, instead of relying entirely upon means with which every practitioner is acquainted, and which almost inevitably fail in all but the simplest cases. Probably, however, the author is not letting us into the full details of his methods, for some parts of the book consist of little more than notes.

The first forty pages are introductory, and are composed of general remarks on the examination of cases and on the general principles of treatment. It is clearly and carefully written, and contains several "tips" which should prove useful in practice. Among special points in it we notice that the author adheres to his view that boiled milk is more digestible than unboiled, and also that he throws doubt upon the commonly accepted view that boiling destroys the "anti-scorbutic" properties of milk. He has no faith in gastric disinfectants, and but little in local abdominal massage. An interesting suggestion is made regarding the value of acids, and that is that they increase temporarily the acidity of the stomach contents up to the point necessary for relaxation of the pylorus, and thereby hasten the emptying of the stomach. Following the introduction are chapters on diseases of the œsophagus, the stomach, and the intestines. In the first of these we find drachm doses of a 1 per cent. solution of cocaïn mentioned as a remedy for the pain in œsophageal carcinoma. As this is to be given before food, and, therefore, two or three times a day, we think that some words of caution should be coupled with the recommendation. The single dose would contain more than half a grain of the alkaloid. The treatment and conditions of acute and sub-acute gastritis seem to be rather mixed up in the writer's mind, and under atonic gastrectasis some opinions are expressed with which we cannot agree—thus we are led to expect a cure within three months by medical means—surely far too short a time for anything like a well-marked case; and we are also told that "these stomachs are always able to empty themselves," a statement undoubtedly incorrect. Again, it is stated that "the diet may need to be modified when there is gastritis, but not on account of the dilatation," a counsel of perfection, for when there is dilatation worth the name there is sure to be gastritis. Many other points throughout the book might be criticised in the above manner, but it is unnecessary to do so, and in offering those given we do so without wishing to detract from the value of the work. We have ourselves read it through carefully and with interest, and we have no doubt that anyone at all interested in the subject, as indeed all physicians must be, will derive pleasure from a comparison of their own methods with those here recommended, and will also derive from it considerable information.

M.

2. THAT the allotted segment of happiness included by a merciful Creator within the circular area which represents man's earthly pilgrimage comes to an abrupt termination at the line of acquisition of the knowledge of the physiological fact that he possesses digestive organs is a common-place familiar to all general readers of the earlier literature of the past century, as well as to the skilled medical expert in esoteric psychology. The more highly organised is the human individual the more susceptible to the often extremely inconvenient manifestations of unsleeping sympathy between the original and terminal poles of the filaments of the pneumogastric nerves. The most morbidly sensitive, as well as most dazzlingly brilliant, of England's poets has asked in somewhat rugged metre the humiliating query:—

> "Who'd pique himself on intellect, whose use
> Depends so much upon the gastric juice?"

—and, probably, after the manner of Pilate, "would not wait for an answer." The inconveniences attendant upon modern digestion appear to project more prominently athwart the pathway of medical progress with each passing year of our own generation; and the requirements which they create, and the painful necessities which they call upon us to relieve, must be regarded as at least contributory to the ekeing out of the subsistence of our overcrowded profession as a whole, while we can hardly affirm with satisfactory confidence that they have hitherto added very appreciably to the altitude of its standard of reputation.

We can hardly dispute the statement with which Dr. Dutch opens his preface:—"The subject of food and its influence on man has in every age attracted more attention than any other branch of hygiene, though it has seldom been treated in anything like a full manner, except by the authors of large text-books on dietetics. . . ." He claims to have used his "best efforts to give as unbiassed an account, and as accurate and widespread a survey, as space would permit, of the principles which govern" the subjects connoted in the title of the volume before us. In order to the quite satisfactory fulfilment of the programme so sketched, our author has, as he proceeds to indicate to his readers—further thought well, in view of the difficulty of conveying a fairly accurate and useful knowledge of the chemical processes concerned, to include an introductory chapter which refers to the "Nature of Matter" and the "Phenomena of Life"; adding the consequential remark that—"Indeed it is perfectly futile for one to hope to acquire a logical conception of the physiological changes which persist in the body, so long as human existence prevails, unless, at least, a rudimentary study is made of these subjects." It is superfluous to indicate to any of our readers the almost limitless dimensions of the task which Dr. Dutch has thus set himself, or the acquirements and abilities requisite to its satisfactory completion. It could be undertaken, we need hardly say, only in an age and generation of universally diffused education, and in which every individual, male and female, relies implicitly on his, or her, power of mental digestion—supplemented and fortified as they so generally are at present by the peptonising process with which every caterer of popular scientific literature professes to prepare his own special products for the intellectual market. "The Nature of Matter" is taught the reader in the first section of the first ("Introductory") chapter of this volume; while "The Phenomena of Life" are discussed in the second (and concluding) section. The former occupies 9-34 of these small octavo pages; the latter pp. 34-41. The question which remains for the reader, of course, is—How much wiser will he be made by their perusal regarding the subject-matter of each—which has worried (and puzzled, and defeated, and exhausted) the mental energies of all philosophers since periods which antedate by tens of centuries the siege of Troy and the exodus of the Hebrew race. A representative average specimen of the writer's clearness of definition is obtainable from the following sentence:—"When elements combine with each other they form complex, or *compound bodies*, and when they exist in a free state, or alone, they form *simple bodies.*" We believe that the uninitiated will not be enlightened to any perceptible extent by the perusal of this sentence; while we feel very positively sure that the expert and initiated will not be at all edified. Under the heading *Spontaneous Combustion* we are gravely informed that "Many instances though of people being burnt alive would nevertheless lead to the conclusion that, under certain conditions, the human body becomes more inflammable; and cases are recorded of confirmed *alcoholics* being practically calcined in a few hours. There can, however, be scarcely any doubt but that in the first instance they must have accidentally set themselves alight." The writer is evidently not aware that a physician of this city has within the past year completely exploded the myth of "spontaneous combustion." Such is Dr. Dutch's science throughout!

We are told on page 33 that "*Gelatin* is found in the muscles"—which we had never believed to be the favourite habitat of that interesting animal product. We do not think it necessary to make further extracts from the text of one of the poorest volumes which it has been our hard lot to be obliged to peruse in the exercise of our critical functions. K.

SOME RECENT WORKS ON SURGERY.

1. *A Treatise on Surgery.* By GEORGE RYERSON FOWLER, M.D. Brooklyn, New York City; Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist Episcopal Hospital; Surgeon-in-Chief to the Brooklyn Hospital; Surgeon to the German Hospital. Containing 888 Text Illustrations and Four Coloured Plates, all original. In two volumes. W. B. Saunders Company. 1906.
2. *Surgery; Its Theory and Practice.* By WILLIAM JOHNSTON WALSHAM, F.R.C.S. Eng.; M.B. and C.M. Aberd.; formerly Surgeon and Lecturer on Surgery, St. Bartholomew's Hospital, and Member of the Court of Examiners, Royal College of Surgeons, England. Ninth Edition, with 620 Illustrations, including 24 Skiagram Plates by WALTER GEORGE SPENCER, M.D., M.B. (Lond.); F.R.C.S. Eng.; Surgeon and Lecturer on Surgery to the Westminster Hospital; Examiner in Surgery, University of London. London: J. & A. Churchill. 1906.
3. *Handbook of Surgery.* By GEORGE BURNSIDE BUCHANAN, B.A. (Cantab.); M.B., C.M., F.F.P.S. (Glasg.); Assistant Surgeon, Western Infirmary, Glasgow; Assistant Surgeon, Glasgow Cancer Hospital. Edinburgh: John Currie. 1906.
4. *Heath's Manual of Minor Surgery and Bandaging for the use of House Surgeons, Dressers, and Junior Practioners.* Thirteenth Edition. Revised by BILTON POLLARD, F.R.C.S.; Surgeon to University College Hospital, and Teacher of Operative Surgery in University College, London; Member of the Court of Ex-

aminers of the Royal College of Surgeons. London: J. & A. Churchill. 1906.

5. *Students' Handbook of Operative Surgery.* By WILLIAM IRELAND DE C. WHEELER (Mod.), B.A., M.D. (Dub. Univ.); F.R.C.S.; Surgeon to Mercer's Hospital; ex-Demonstrator of Anatomy, Trinity College, Dublin. London: Baillière, Tindall & Cox. 1906.

6. *Gastric Surgery.* Being the Hunterian Lectures delivered before the Royal College of Surgeons of England on February 19th, 21st, and 23rd, 1906. By HERBERT J. PATERSON, M.A., M.B., B.C. (Cantab.); F.R.C.S. (Eng.); Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons; Assistant Surgeon to the London Temperance Hospital. London: Baillière, Tindall & Cox. 1906.

1. VOLUME I. consists of 722 pages, and is devoted for the most part to general surgery and surgical principles. The author tells us the grouping of the topics differs somewhat from the arrangement usually employed, but we think the arrangement will be found to be very similar to that adopted by most British authors. It is always a disputed point whether a book intended for the teaching of general surgery and surgical principles should include a chapter on "Laboratory Aids in Surgical Diagnosis and Prognosis." For our own part we rather welcome it, especially when written clearly and succinctly, as is the case in the volume under review; but we have no hesitation in condemning Section xiii., which contains no less than 40 pages devoted to bandaging. This section is, no doubt, well written and properly and excellently illustrated, but is out of place in a pretentious work of this nature. Its proper place is in a work on "Minor Surgery." Like the section devoted to "Laboratory Aids in Diagnosis and Prognosis," it is questionable whether a work intended to teach the principles and practice of modern surgery should contain chapters illustrating the methods of holding a knife, dividing the tissues, and co-apting the edges of the

wound. Those for whom the work before us is intended are supposed to be already acquainted with such matters. Consequently, we can only look upon these sections as unnecessary and out of place, while their inclusion, and the profuseness with which they are illustrated, add much to the bulk of the volume and to the cost of production.

The section on tumours—Section vi., one which lends itself well to illustration—is but poorly illustrated, while the text itself leaves much to be desired. Now and again we come across statements in the text which are not quite in accord with our experience in this country, nor with what we are accustomed to either teach or read. Here is one taken at random. Speaking of cancer of the tongue he says:—"The most common location for its first appearance is on one or the other side of the tip." In our experience cancer is more frequently found in the middle third at the side. Again, in connection with the operative treatment of cancer of the tongue, we are told that "Preliminary tracheotomy, or, better still, laryngotomy, should be performed when the entire tongue is to be removed." Such is neither the practice nor the teaching in this country.

Volume II. begins with the surgery of the spine, and winds up with the surgical affections of the extremities. The intervening portion is devoted to the surgery of the abdominal organs and genito-urinary surgery, while a special section (xix.) treats of the surgery of the female pelvic organs.

This volume is as large as the first, and contains 714 pages. The illustrations are equally elaborate and profuse, but the text is, in our opinion, somewhat discursive. The wonder is that two such ponderous volumes could be written and yet contain so little information. The work is too massive for the student, and we fear will be found disappointing as a work of reference if bought for that purpose by the general practitioner. We should add that the publishers must be congratulated on the manner in which they have performed their part of the work.

2. THREE years have elapsed since we reviewed the eighth edition of Mr. Walsham's ever-increasingly popular work. The appreciation it has received at the hands of the profession generally, and the student in particular, is ample testimony to the merit of the book. The edition before us has been thoroughly revised and brought well up to date by Mr. Walter G. Spencer. Many additions and alterations have been made in the text, and some sections have been re-written, whilst obsolete teaching and methods have been deleted. It is quite unnecessary for us to say more than to draw attention to the appearance of the ninth edition and to state that we can confidently recommend it to the practitioner and student as sound and eminently practical in its teaching.

3. THE author tells us in his preface that the appearance of another book on surgery for students, among so many excellent manuals already in existence, may seem to require some explanation. We think so, too, and yet we fail to find it either in the preface or after perusal of the text. The book is a short epitome of Walsham, Treves, and Rose and Careless, while other important treatises have been consulted in its compilation on special subjects. As such we have no fault to find with it, but we fail to see what want its appearance has filled. There is but one point we will delay to criticise; it will be found in the last section of the last page of the text. It is that if in more severe cases of hammer-toe, in which the wearing of a small tubular metal splint, with a continuation along the sole, is obviously useless, "the constricting ligaments and tendons should be cut, and if this fails to give relief the toe may be amputated." This is surely not the teaching of the Scottish schools. We should be inclined to reject the candidate who would give amputation as the treatment for hammer-toe under any circumstances, and yet this is the teaching we are expected to recommend students to study.

4. As in the case of "Waltham's Surgery," we need do no more than mention that the thirteenth edition of "Heath's

Manual" lies before us. It is well revised by Mr. Bilton Pollard, and can be confidently recommended to surgical dressers and students in general.

5. Mr. Wheeler's "Handbook" is intended for those taking out a course of operative surgery for the first time. The author has selected for description only one method of performing each operation, with the idea of avoiding confusion, and in this selection he has adopted the method most favoured by recognised authorities. The descriptions are unquestionably clear and concise. The various operative procedures described as performed upon the extremities show the author at his best. The abdominal operations are described in a more meagre fashion. For example, operations upon the gall-bladder are described in an altogether too discursive manner for a student attempting to perform them for the first time to follow clearly, while, in our opinion, the author is at fault in his teaching of the alternative procedures to be adopted under certain circumstances. On the whole, the book will be found to fulfil amply the object with which it was produced, and as such we can recommend it to the student with confidence. While congratulating the author on the appearance of the volume, we may be permitted to express the hope that in future editions the section devoted to the description of abdominal procedures will be enlarged in proportion to the importance this branch of surgery has at present attained.

6. This volume consists of the Hunterian Lectures delivered by the author before the Fellows and Members of the Royal College of Surgeons, England, last February. They were based upon a portion of the author's Jacksonian Prize Essay. The subject-matter deals with the surgery of the stomach, and has already appeared in the leading journals. The essays are delightful reading, and are eminently practical throughout. There is one statement the author made in connection with the use of Murphy's button in the performance of gastro-enterostomy with which we are in complete accord—viz., that

"it is at once the simplest and the most dangerous of the different methods," but we think he oversteps the mark when he states that it (the button) is altogether out of place inside the abdomen.

The after effects of the operation of gastro-enterostomy are all fully discussed, from regurgitant vomiting to peptic ulcer of the jejunum and the effect of the operation upon the metabolism of the body. The author continues to favour the anterior operation, and adduces his reasons in full for the preference. Especially would we recommend to the study of physicians generally that portion of Lecture II. devoted to the consideration of the following three questions:—

I. What is the natural history of gastric ulcer treated medically?

II. The mortality of the surgical treatment proposed?

III. The prospect of cure after operation?

The portion of Lecture III. devoted to "Infantile Hypertrophic Stenosis of the Pylorus" is extremely interesting, as the subject is one which has only recently been brought prominently before the profession.

An appendix has been added, describing the author's method of preparation of the patient for a gastric operation, his technique of anterior gastro-jejunostomy, and his treatment subsequent to operation. The volume is a valuable contribution to the literature of this most important branch of surgery, and should be read and studied by every general practitioner, physician, and surgeon alike.

The Climate of Lisbon and of the two Health Resorts in its Immediate Neighbourhood, Mont' Estoril, on the Riviera of Portugal, and Cintra. By DR. D. G. DALGADO, of the Royal Academy of Sciences of Lisbon. London: H. K. Lewis. 1906. 8vo. Pp. 52.

THIS pamphlet is a modified and enlarged edition of a paper read before the Section of Hygiene of the Fifteenth International Congress of Medicine, held at Lisbon in April of the present year.

Dr. Dalgado states at the outset that his object is to show—"(1) That the climate of Lisbon in winter, as well as in other seasons, is not variable, as has been stated by some eminent English writers; (2) that Mont' Estoril, as a winter health resort, is in many respects superior to Biarritz, Nice, and Catania; and (3) that Cintra, 'the most blessed spot' in 'the habitable globe' of Robert Southey, is a very desirable and charming health resort in summer, but not in winter."

These propositions the author establishes in his instructive little book. From personal observation in a recent visit to Lisbon and its environs we are in a position to corroborate Dr. Dalgado's conclusions in a general way: but we must say that the strength and coldness of the N.-W. winds at Cascaes, beautifully situated at the mouth of the Tagus, and close to the open Atlantic, impressed us unfavourably, seeing it was almost the end of April when we visited the Riviera of Portugal.

Dr. Dalgado's pamphlet is well worth reading, and cannot fail to attract English visitors to the charming Portuguese capital and lovely Cintra—

> "Where the tired mind
> Might rest beyond the murmurs of mankind."

Elementary Microscopy. By F. Shillington Scales, F.R.M.S. London: Baillière, Tindall & Cox. 1905. Cr. 8vo. Pp. xii + 180.

This is a little book of some 180 pages devoted to the natural history of the microscope. The book is mainly intended as a guide to a student bent upon the acquisition of a microscope for some useful purpose, and as such is distinctly successful. No encouragement at all is given to anyone vaguely thinking of microscopy as a pastime, and for such the book will have no interest. But to the student hoping to invest his little all in a really useful instrument, and doubtful where to choose, every help is given. Microscopes for every imaginable purpose and important accessory parts are clearly illustrated and their uses explained.

A refreshing feature of the book is the writer's frank advocacy of the English instruments. He deprecates the almost universal use of the foreign microscope. The lenses of our own makers leave nothing to be desired in the matter of definition, and in general give a flatter and a wider field; and when we come to compare the stands, the English workmen more than hold their own, the simple mechanism and perfect finish of their adjustments giving them a claim to far wider popularity. With instruments by such makers as Swift, Watson, and Beck upon the market at reasonable prices, why are our laboratories, with few exceptions, supplied with Leitz microscopes?

The chapters on the handling and care of a microscope are excellent, although so much cannot be said for the hints on cutting and mounting sections. The special methods for the various branches of microscopy, being somewhat complex, required space which might well have been spared from the almost too elaborate catalogue in the earlier chapters of the work.

A Treatise on Diagnostic Methods of Examination. By PROFESSOR H. SAHLI, Director of the Medical Clinic, University of Bern. Edited, with additions, by F. P. KINNICUTT, M.D., Professor of Clinical Medicine at Columbia University, New York; and N. P. POTTER, M.D., Visiting Physician to the City Hospital, New York. Translated from the Fourth German Edition. Philadelphia: W. B. Saunders & Co. 1906. Pp. 1008.

OF the many works which, during the past few years, have been published on the subject of physical diagnosis, Professor Sahli's appears to us to be one of the most complete. Not only are chemical, microscopical, and other methods of examination, which require laboratory apparatus, fully described, but a complete and accurate account is given of auscultation, percussion, the examination of the nervous system, the ophthalmoscope, even of the appearance and colour of the patient, his attitude in bed, and the best methods of case taking. In fact, the work might be described as an exhaustive and systematic treatment on all the physical signs which may be observed in health and in disease.

The book is really a very valuable one. Take, for instance, the heart. The normal phenomena in connection with this organ are fully discussed: their cause and nature are explained; and the phenomena of disease are elucidated with more wealth of detail than in almost any other book we know. Even monographs on the heart do not generally contain as much about rare and obscure physical signs.

The translation has been well done, and the style is clear and readable. Many useful illustrations and diagrams are introduced.

We recommend Professor's Sahli's work as being an excellent and satisfactory guide to clinical diagnosis.

Medical Officers of Schools Association. On the Hours of Sleep at Public Schools: based on an Inquiry into the Arrangements existing in forty of the great Public Schools in England, and others in the U. S. A. A Paper read before the Association of May 11, 1905, by T. D. ACLAND, M.A., M.D. Oxon., F.R.C.P.; Physician to St. Thomas' Hospital, and Consulting Physician to the Hospital for Diseases of the Chest, Brompton. London: J. & A. Churchill. 1905. 8vo. Pp. 33.

THE very great importance of the subject of this paper has just received emphatic recognition from that prominently representative body of British Science and its Apostles—the British Association for the Advancement of Science. The amount of attention which Dr. Acland's views commanded at the recent York meeting has been well shown by the discussion which they elicited from members of the inner circle of that oligarchy of light and leading, as well as by the subsequent comments and criticisms in the various important daily and weekly papers. The subject of sleep comes home to every home and hearth—to say nothing of the dormitory; and its importance as a recuperative agent has never been ignored by any sane member of the human race, without special regard to civilisation. And now that the subject of the (real or fancied) deterioration of British physique—to which some would add that of all those other communities that collectively represent, and have contributed to, our Western civilisation—is so prominently in the mind's eye of the patriotic and philanthropic, to which we may add the philosophical and biological, members of the British public, we may expect to have a goodly proportion of the English thought and language of the near future expended upon the investigation of the physiology and psychology of dreamland. There can be no possible doubt whatever that copious and serious grievances have existed in connection with the management of the dormitories of public schools, and the community at large is greatly indebted to Dr. Acland for his application of the flashing search-light which he has brought to bear upon them. Eating, drinking, and sleeping—the three pillars of the tripod of life! Of what incalculable importance to every individual is the judicious management of each, especially in early life, while the process of growth still continues!! The guardians of the young cannot be too circumspect in this department—in providing for a full physiological ratio of undisturbed sleep. True it is that the actual period will always vary within limits of very diverging range, and that the specialist who undertakes to legislate or advise on this subject should bear in mind the possibilities of the phenomenal activity of a Napoleon, in the intervals between his occasional 5—or 10—minutes' nods; the 12-hour daily allowance recommended just recently by the German savant; and the preservation of health and return to physical and mental activity after apparent cataleptic existences which have been prolonged over years. We protest against the adoption of any procrustean legislation on the matter; but, with this proviso, we feel that Dr. Acland has opened up one of the most important discussions of the twentieth century, and that his views are characterised by real philanthropy, sound science, and sound common sense.

The Writers' and Artists' Year-book, 1906. A Directory for Writers, Artists and Photographers. London: Adam & Charles Black.

The fact that the printing-press is the most important mechanical aid to the control (and maintenance) of our latter-day respectability, as the finger-print is of its criminality—

while each of those crutches of our civilisation is also buttressed by the photographic plate and the lithographic reproduction—sufficiently guarantees the value of such a reference volume as the booklet before us. Messrs. Black are well known in this connection as the publishers of such volumes as *Who's Who ? Who's Who Year-book*, the *Eighty Club Year-book*, each of which is worshipfully purchased and continuously consulted by the oligarchic members of our democratic snobocracy. May they long survive in the enjoyment of those carefully-prepared and well-printed reference manuals, to which even the "outsider" must often have recourse for indispensable information!

Les Universités des États Unis et du Canada, et spécialement leurs Institutions Médicales. Par le DR. O. LAURENT, Agrégé Suppléant à l'Université de Bruxelles. 22 Figures et Plans. Bruxelles: H. Lamertin, Editeur. Paris: G. Carré, Libraire. 1894.

ALTHOUGH the step from the date of the publication of this volume to the present is of even greater longitude than the seven-league unit of progression with which our trans-atlantic cousins are sometimes said to prefer to punctuate their pathway of materialistic advancement, the comparatively stationary condition of the *constitution* of the high-class educational centres with which it deals tends to preserve the valuable instruction which it conveys in all its original freshness. Such conservatism is, of course, absolutely necessary to the due fulfilment of the functions of a great focus of intellectual illumination, the brilliancy of whose rays would be at once obscured by the occurrence of any and every disturbance at their source. This fact will, we feel, be contradicted by nobody—except for purposes of political profit. And now that the "University Question" is so very much in the air of our own island, the perusal of Dr. Laurent's pages has proved a source of delightful instruction—conveyed, as it is, in the clearest and smoothest language, combining the crystalline transparency of written expression which so distinctively characterise the higher-class scientific literature of both the great Republics of the opposite sides of the Atlantic. He defends with dignity the medical departments of the Universities on his own side of the Ocean:

"*On ne recontre nulle part ailleurs des établissements mieux organisés et plus merveilleusement riches que l'hôpital Johns Hopkins de Baltimore, que la salle d'opérations Syms de New York, que l'Université de Chicago et que celle de San-Francisco.*" The fact that the premier University of England has recently imported "the brightest jewel on her [medical] zone" from the cestus of the first of her above-named junior sisters furnishes the most emphatic endorsement of Dr. Laurent's estimate that the mother country could well supply!

Medical and Pharmaceutical Latin for Students of Pharmacy and Medicine. A Guide to the Grammatical Construction and Translation of Physicians' Prescriptions, including extensive Vocabularies and an Appendix upon Foreign Prescriptions. By REGINALD R. BENNETT, Pharmaceutical Chemist; Pharmacist and Teacher of Pharmacy at University College Hospital, London; late Demonstrator of Pharmaceutics to the Pharmaceutical Society of Great Britain. With an Introduction by HENRY G. GREENISH, F.I.C., F.L.S.; Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. London: J. & A. Churchill. 1906. 8vo. Pp. xii + 442.

THE preface informs us that the extremely neat and carefully-prepared volume before us represents a re-written issue of Dr. Jonathan Pereira's formerly noted *Selecta è Prescriptis.* The last edition of this famous manual appeared in 1890, and the mere mention of the date is sufficient proof that the greater portion of the text of that volume possesses little or no value for the busy pharmaceutical student of the early years of the twentieth century. Accordingly, it has been "thought desirable to re-write the entire volume. A summary of the leading features of Latin Grammar, so far as the student must know it in order to write correctly, and to translate intelligently and appropriately medical directions, has been included. Also, there has been incorporated a large number of new prescriptions written in the abbreviated

Latin style used by physicians, while in another section will be found the unabbreviated Latin and the English translation of the same." This sketch of the writer has been painstakingly and thoroughly filled in, and we cordially congratulate him on the way in which he has carried out the sum and the details of his task.

As Professor Greenish truly remarks, in his all too short introduction: "The tendency, both in this country and on the Continent, to abandon the use of the Latin language, in the writing of prescriptions as well as of pharmacopœias, is as marked as it is regrettable. While the principal reason for the change is doubtless to be found in the saving of trouble to busy men, who are thus spared the trouble of becoming and remaining familiar with a language other than the vernacular, yet there is much to be said in favour of a universal language for pharmacopœias and physicians' prescriptions . . . A further step in the direction of obviating inaccuracies in the dispensing of foreign prescriptions would be found in the writing of those prescriptions in a universal language, Latin, by which they would be readily intelligible to the pharmacists of all countries, just as systematic descriptions of plants are written in Latin and are universally intelligible to systematic botanists." The validity of this claim on the physician and pharmacist, of the majestic language through which the germs of all the modern thought of Western Europe have necessarily been transmitted to recent times, cannot be seriously disputed. All must admit the wisdom and the dignity of the precept. The actual source of mischief must be sought, we believe, in the example. In our twentieth century era of liberty and equality, and hurry and scurry, with their innumerable concomitant agencies, the average medical practitioner and apothecary lay most closely to heart the patent fact that now and again a physician or a surgeon has been raised to a foremost position in a "learned" profession without a knowledge of Latin—to say nothing of Greek—or even of average grammatical English. Of course, the single swallow does not necessarily create a summer; but more applicable to the present discussion is the unquestionable influence of the "one scabby sheep," which has been so well and truly indicated by the sacred songster. But those of us who are favoured by another class of deities, and who were born under widely opposed planetary influences, must continue to live in the hope that the barbaric conquest of muscular vigour, and ruffianly ignorance and presumption, which has swept so many departments of our profession in this revolutionary generation, will soon again recede to the depths of the unwholesome abyss whence its agents emerged, and where such qualities and influences worthily reign. The thoroughness with which the excellent manual before us has been prepared is one of the hopeful signs of the times, and is unmistakeable testimony to the survival of some representative guardians of the intellectual culture of Medicine and the associated sciences.

The Consumptive Workingman. What can Sanatoria do for him? By NOEL DEAN BARDSWELL, M.D., M.R.C.P., F.R.S. (Edin.); Medical Superintendent, King Edward VII. Sanatorium. London: The Scientific Press, Ltd. 1906. Pp. 202.

THE appearance of Dr. Bardswell's practical book at the present time is opportune. On every side one is met with the question "Is the sanatorium worth while?" and many authorities, medical and lay, realising the number of failures, real or relative, amongst patients discharged from such institutions are asking if the money spent on their erection and maintenance might not have been applied with better results to preventive measures. A simple record of cases whose condition was carefully noted at the commencement of treatment, and whose after-history has been followed up, was needed to correct our ideas regarding the value of the method, especially in its relation to the workingman. This book in part supplies the need. The cases have been followed up with care, and Dr. Bardswell seems to have been particularly fortunate in having to deal with men of more than average intelligence, if one may judge from the replies given to his inquiries. The number of cases dealt with—twenty-five—is too small to enable us to draw definite conclusions from them.

but they form a beginning and mark the way along which further investigation may be undertaken with advantage.

The generalisation based on the results of these cases that "of all admissions to a sanatorium for the working-classes we may expect—

"Permanent restoration of health and normal working capacity in 41.7 per cent.

"Death in the course of from two to five years after discharge in 41.7 per cent.

"Some degree of permanent restoration of health and capacity for work in 16.6 per cent.," appears to us to be too optimistic for the great body of unselected cases taken from among the working-classes.

A larger number of those in whom some degree of restoration of health and capacity for work is effected, along with a smaller number of completely successful cases, would still give us sufficient ground for emphatically declaring that the sanatorium is "worth while," not merely from the philanthropic, but also from the economic point of view. For it is a mistake to regard the sanatorium as an institution for curative treatment only; it has functions in regard to isolation and education of very great importance which cannot be estimated by statistics.

Dr. Bardswell's description of the Salvation Army's Farm Colony at Hadleigh is an interesting feature of the book, and the experiences of that great philanthropic experiment should prove useful in the formulation of a practical scheme for dealing with consumptive workingmen on their discharge from the sanatorium.

In Ireland, where wages are lower all round than they are in England, and where the opportunities for finding suitable employment after discharge are limited, the chances of the consumptive workingman maintaining his efficiency are so slight that we should anticipate a much lower percentage of complete successes than 41.7.

We miss from the reports of the cases systematic records of the bacteriological examination of the sputum made at the commencement and during the course of treatment.

The book is eminently practical, and should prove of service not only to medical readers, but also to that ever-growing body of public men who, while seeking to alleviate human suffering, are endeavouring to do so along sound economic lines. In heartily commending it to such we venture to express the hope that Dr. Bardswell, amidst the duties which fall to him amongst a different class of patients in his new appointment to King Edward's Sanatorium, may still find time to follow up the after-histories of his old friends amongst the workingmen.

A System of Gynæcology by many writers. Edited by THOMAS C. ALLBUTT, M.A., M.D., F.R.S., Regius Professor of Physic in the University of Cambridge; W. S. PLAYFAIR, M.D., F.R.C.P., Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital; and THOMAS WATTS EDEN, M.D., F.R.C.P., Assistant Obstetric Physician, Charing Cross Hospital; Physician to In-Patients, Chelsea Hospital for Women, &c., &c. London: Macmillan & Co., Ltd. 1906. Pp. xx + 949.

A NEW edition of Allbutt and Playfair's System of Gynæcology has been brought out under the editorship of Dr. T. W. Eden. As is well-known, the former edition of the book was composed of contributions by a considerable number of English gynæcologists, six Scottish gynæcologists, and one Irish gynæcologist. To the present volume an additional Scotsman has been invited to contribute, the Irish School is still represented by one contributor, and the remaining nineteen contributors are furnished by England.

We may commence by saying that we consider the work has been enormously improved, and that we quite recognise the limitations that doubtless hamper the editor. In one respect, however, he has, we think, made a preventable mistake—at least from the reviewer's point of view—namely, that he has omitted all preface to the new edition. In consequence it is impossible to tell, without considerable difficulty, what and how much revision has been thought necessary and what new contributors have been added to the list. For this reason the remarks which we propose to make will perhaps strike their readers as disjointed and more in the nature of a running comment than of a sober review. Doubtless, also, if we had known to what special part of the book to devote our closest attention, we should have found as many occasions for approval as we now have found for disapproval.

English gynæcologists, having for many years resisted all efforts to prove to them that such a condition as that known as "epithelioma malignum" existed as a distinct pathological entity, have at last been compelled to give way, and the best-known advocate in Great Britain of its existence, and the one-time most steadfast opponent, have united to write an article on the subject. The combination is a curious one, and suggests that if Dr. Teacher had been allowed a free hand he might have said things about the hereditary folly of the ostrich—things that might not have pleased all those concerned. *Festina lente* is a good motto, and it is at least a consolation to know that what the rest of the gynæcological world knows to-day London will know next year. Still there must be many who wish that the *vis inertiæ* that has opposed advance in gynæcology had not been so great in the capital city of the empire.

Mr. Bland Sutton still repeats in italics that "a tubal mole is due to blood extravasated from the circulation of the embryo into the sub-chorionic chamber. He shows a drawing of a tubal mole in section, natural size, in which an embryo, some two-thirds of an inch in length, is surrounded by a clot of blood, which, apparently, is equal to the contents of an ovoid measuring some two inches by an inch and a half. Mr. Sutton says that this blood comes from the embryo. It may be that he is right, but we venture to suggest that the alleged fact is sufficiently wonderful to entitle the reader to a little more proof than is furnished by Mr. Sutton's unstated "observations," and the presence of some nucleated red blood corpuscles in the clot.

Dr. Eden's criticisms on the methods of sterilising catgut are admirable in theory, but, unfortunately, they do not show that their author possesses a considerable knowledge of the exigencies of practice.

Sir Halliday Croome is a brave man, inasmuch as in an English work on gynæcology he has had the courage to express his belief in the possibility of a mechanical cause of dysmenorrhœa. Needless to say, we are in complete accord with him, but it is a horrible heresy to allow to intrude into an English work of this kind.

Mr. Amand Routh is rightly suspicious of the sterility of laminaria tents as sent out by the instrument maker. May we, however, point out to him that they can be sterilised by prolonged immersion in a one per cent. (not a 1 in 1,000) solution of corrosive sublimate in alcohol, or, if required for immediate use, by boiling in a catgut steriliser in superheated alcohol. One or other such procedure will obviate the harmful practice of immersing the tent in pure liquid carbolic acid before use.

Mr. Henry Morris contributes an article on Diseases of the Female Bladder and Urethra. Mention is made of the existence of such a means of examining the inside of the bladder as Nitze's cystoscope, and nine lines describe how it is used. As the entire article occupies some thirty-two pages, and as only a page is devoted to the remaining methods of direct examination, some more adequate description of diagnostic methods seems called for.

Mr. Herbert Spencer considers that supra-vaginal amputation of the uterus, with extra-peritoneal treatment of the stump, is "still the best operation for the removal of the uterus in advanced cases of cancer complicating pregnancy." Cancer of what? We confess to be entirely unable to supply the missing words. The writer cannot refer to cancer of the cervix, nor very well to cancer of the body. Does he mean extra-uterine cancer? If so, why does he not say so, and why, in such cases, should hysterectomy of any kind be indicated? Mr. Spencer continues:—"It" (the same operation) "was until ten years ago the safest operation for fibroids." On first reading this we thought it must be a sentence repeated by an oversight from the former edition, but, on referring to the article on hysterectomy in that volume, we find that Mr. Knowsley Thornton, who contributed it, actually gives the operation first place as a means of removing a myomatous uterus. All this points to the importance of having the work written by Englishmen. We doubt if many Irishmen have seen the operation performed within the last sixteen years!

The illustrations of the book are, perhaps, its weakest point. In all they number 281—not an excessive number for a work of 949 pages. Moreover, of these 281, some seventy show instruments and apparatus, and a very large number of the remainder are copied from other books. Sir William Smyly's article on diseases of the external genitals is perhaps the best illustrated, and contains some very fine original drawings of elephantiasis, posterior labial hernia, fibromyoma of the labium majus, epithelioma of the labium majus, and sarcoma of the vagina. The article is a good one, but, we notice, that in discussing the treatment of pruritus vulvæ he does not refer to the operation which Sir Charles Ball has suggested for pruritus ani, which operation is said to be also of value in the former condition.

In conclusion, we venture to suggest that while there is a very great deal in the book that is admirable, there is also much that a firm editor might wipe out of existence with his reversed stylus. More illustrations drawn from life and less of the curious type of diagram which complicates the article on plastic gynæcological operations, more modern practice and less of the teachings of ten years ago, a more clear-headed view of gynæcological questions and less of that curious mental obliquity which leads men to operate with the patient in Marion Sims' position, and the work will be worthy, not merely of the English, but of the British school of gynæcology.

May we suggest such a course to the Editor on the next occasion that his services are required. If he adopts it, it will not take ten years to exhaust an edition.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

A FORGOTTEN WORTHY:

DR. DIEGO ALVAREZ CHANCA, *of Seville, Spain.* By A. M. FERNANDEZ DE YBARRA, B.A., M.D., of New York.

WITH Christopher Columbus, on his second voyage of discovery to America, in the year 1493, there came Dr. Diego Alvarez Chanca, a distinguished practitioner of much learning and professional skill, who held the position of Physician-in-Ordinary to the King and Queen of Castile and Aragon, and had attended their first-born child, Princess Isabella (who afterward became Queen of Portugal), during a serious illness the year before. He was a native of the city of Seville, and had been especially appointed by the Spanish monarch to accompany that expedition, not only on account of its great political and commercial importance, but also because amongst the 1,500 persons who came over from Europe to America in that fleet were several distinguished personages and a large number of aristocratic young gentlemen, restless and daring warriors who had done excellent service in the war just ended against the Moors.

That expedition was altogether different from the one sent out the previous year in quest of a new passage to the Indies. Instead of the three small caravels, carrying only 120 persons, which accomplished the most transcendental event in the history of humanity—the discovery of the Western Hemisphere of our planet—this flotilla was composed of three great galleons or caracks and fourteen caravels of different sizes. It was well provided with all the requisites for the establishment of a permanent settlement in the land that had been discovered the year before. Even 20 horses for as many lancers (which played a most terrorising influence among the American Indians) were also on board those vessels.

On their arrival at the island of Hispaniola or Santo Domingo—where the year before Columbus had left 38 men in an improvised fortress constructed with the remains of the caravel *Santa Maria*, wrecked on the reefs of the shore—Dr. Chanca wrote in the Spanish language of the fifteenth century his famous letter to the Municipal Council or *Cabildo* of his native city, which manuscript is unquestionably THE FIRST WRITTEN DOCUMENT ABOUT THE FLORA, THE FAUNA, THE ETHNOLOGY AND THE ANTHROPOLOGY OF AMERICA.[a]

From this important historical document I will quote now, making the translation into English from the original in Spanish, several paragraphs to show the accomplishments of this forgotten member of the medical profession.

As an able practitioner, he saved the life of Christopher Columbus, who suffered a very dangerous attack of typhus fever, on one occasion, and pernicious malarial fever on another occasion, as well as the lives of many Spanish hidalgos who were at the point of death as victims of disease during their stay at the island of Hispaniola or *Haiti*, as the aborigines called it.

Dr. Chanca's letter was written at the port of Isabella during the last days of January, 1494, left that port on the 2nd day of February, in care of Don Antonio de Torres, commander of the twelve vessels sent back by Columbus to Spain with the news of the discoveries, and arrived there April 8, 1494.

On his return to Spain, Dr. Chanca published in Spanish, in the year 1506, a treatise on *The treatment of pleurisy* (*Para curar el mal de costado*), and a commentatorial work in Latin, criticising the book entitled *De conservanda juventute et retardanda senectute*, whose author was another celebrated Spanish physician named Dr. Arnaldo de Villanova. The title of the second work of Dr. Chanca is *Comentum novum in parabolis divi Arnaldi de Villanova*, which was printed in Seville in the year 1514.

Here now follow some scattered paragraphs, translated by me from the original Spanish letter of Dr. Diego Alvarez Chanca, addressed to the municipal authorities of the city of Seville, considered by competent judges to be a most remarkable document, and the best description of the first part of the second voyage of Christopher Columbus to America. I have added a few explanatory notes, geographical and historical remarks :—

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[a] On the 5th day of March of the present year I had the honour to deliver a lecture on this very subject before the Biological Section of the New York Academy of Sciences, at the American Museum of Natural History of that metropolis.

"Since the occurrences which I relate in private letters to other persons are not of such general interest as those which are contained in this epistle, I have resolved to give you a complete narrative of the events of our voyage, as well as to treat of other matters which form the subject of my petition to you.

"The news I have to communicate are as follows :

"The expedition which their Catholic Majesties sent, by Divine permission, from Spain to the Indies under the command of Christopher Columbus, admiral of the ocean, left Cadiz on the 25th day of September, in the year 1493, with wind and weather favourable for the voyage. This wind lasted two days, during which time we managed to make nearly fifty leagues. The weather then changing, we made little or no progress for the next two days ; it pleased God, however, after this, to restore us fine weather, so that in two days more we reached the island of Great Canary. Here we put into harbour, which we were obliged to do to repair one of the ships that made a great deal of water. We remained all that day, and on the following set sail again, but were several times becalmed, so that four or five days more passed before we reached the island of Gomera. We had to remain at Gomera one day to lay in our stores of meat, wood, and as much water to drink as we could stow, preparatory for the long voyage that we expected to make without seeing land.[a] Thus it happened that through the delay at these two ports, and being calmed the day after leaving Gomera, we spent nineteen or twenty days before we arrived to the island of Ferro.[b]

"After this we had, by the goodness of God, a return to fine weather, more continuous than any fleet ever enjoyed during so long a voyage ; so that leaving Ferro on the 13th day of October, within twenty days we came in sight of land, but we should have seen it in fourteen or fifteen days if the ship 'Capitana'[c]

[a] In that island of Gomera, Columbus embarked eight pigs, bulls, cows and calves, sheep and goats, fowls and pigeons, seeds of oranges, lemons, bergamots, citrons, pomegranates, dates, grapes, olives, melons and other European fruits, as well as all kinds of orchard and garden vegetables. All these were the origin of their species in the New World. The expedition likewise carried implements of husbandry, shipped before leaving Spain.

[b] This is the south-western-most of the group of the Canary Islands, formerly called the Fortunate Islands, and is named in Spanish *Hierro*.

[c] That vessel was a galleon of 400 tons burden, that carried the Admiral's flag, and in which Dr. Chanca made the trip.

had been as good a sailer as the other vessels, for many times the others had to shorten sail because they were leaving us much behind. During all this time we had great fortune, for throughout the voyage we encountered no storm, with the exception of one on St. Simon's Eve, which for four hours put us in considerable danger.[a]

"On the first Sunday after All Saints' Day—namely, the 3rd of November, about dawn, a pilot of the ship 'Capitana' cried out: 'The reward, I see land!'[b]

"The joy of the people was so great that it was wonderful to hear their cries and exclamations of pleasure; and they had good reason to be delighted, for they had become so wearied of bad living, and of working the water out of the leaky ships, that all sighed most anxiously for land. The pilots of the fleet reckoned on that day that between the time of leaving the island of Ferro and first reaching land we had made eight hundred leagues;[c] others said seven hundred and eighty, so that the difference was not great, and three hundred more between Ferro and Cadiz, made in all eleven hundred leagues.[d] I do not, therefore, feel now as one who had not seen enough water.

"On the morning of the aforesaid Sunday we saw lying before us an island, and soon on the right hand another appeared. The first was high and mountainous on the side nearest to us: the other was flat and very thickly wooded. As soon as the light of day became brighter other islands began to appear on the right and on the left of us, so that that day there were six of them to be seen lying in different directions, and most of them of considerable size. . . . .

"This island of Marigalante is filled with an astonishing thick growth of wood; that variety of trees being unknown to us, some of them bearing fruit and some others flowers. It was surprising to see that, and indeed every spot was covered with verdure.

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[a] They believed themselves in much peril, as they certainly were in such a sudden and fierce storm, accompanied by heavy rain, rapid lightning and great peals of thunder, which are so frequent in the tropics, until they beheld several of those lambent flames called by sailors "St. Elmo's tapers," playing about the tops of the masts, and gliding along the rigging, which are occasionally seen about tempest-tossed vessels during a highly electrical state of the atmosphere. The sailors consider that phenomenon as of good omen.

[b] The Spanish Government had offered a reward in money to the first person who would see land in this voyage.

[c] That is to say, 2,400 Spanish miles, or about 2,057 English miles.

[d] 3,300 Spanish miles, equivalent to about 2,829 English miles.

"We found there a tree whose leaf had the finest smell of cloves that I have ever met with; it was in shape like a laurel leaf, but not so large: I think it was really a species of laure.[a] There were wild fruits of various kinds, some of which our men, not very prudently, tasted; and upon only touching them with their tongues, their mouths and cheeks became swollen, and they suffered such a great heat and pain that they seemed by their actions as if they were mad, and felt obliged to resort to cooling applications to ease the pain and discomfort.[b] . . . . . .

"These islanders appear to us to be more civilized than those who had hitherto been seen before, for although all Indians have houses made of straw, yet the dwellings of these people are constructed in a much superior fashion, better stocked with provisions, and exhibit more evidence of industry both on the part of the men and of the women. They had a considerable quantity of cotton, already spun and prepared for spinning, and many cotton blankets so well woven as to be in no way inferior to those similar ones made in our country.[c] . . . .

"We were able to distinguish which of the women were natives of these islands and which captives, by the distinction that a Caribbee woman wore on each leg two bands or rings of woven cotton, one fastened around the knee and the other around the ankle, by this means making the calves of their legs look big and the above-mentioned parts small, which I imagine they do because they believe this sort of adornment makes them pretty and graceful: by that peculiarity we distinguish them.

"The captive women told us that the Caribbee men use them with such cruelty as would scarcely be believed; and that they eat the children which they bear to them, only bringing up those which they have by their native wives. Such of their male enemies as they can take away alive they bring here to their homes to make a feast of them, and those who are killed in battle they eat up after the fighting is over. They claim the flesh of man is so good to eat that nothing like it can be compared to it in the world; and this is very evident, for of the human bones we found in their houses everything that could be gnawed had already been gnawed, so that nothing else remained of them but what was too hard to be eaten. In one of the houses we went in we found the neck of a man undergoing the process of cooking in a pot, preparatory for eating it.[a] . . . .

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[a] Probably, it was the *Kalmia angustifolia* or "Laurier des Montagnes," as is called in the French West India Islands.

[b] I believe those poisonous fruits were a species of small apple, called in Spanish *manzanillo*, or in English, manchineel tree (the *Hippomane mancinella*), which is still to be found in the West India Islands. The fruit of the manchineel tree produces similar effects to those here described by Dr. Chanca, also vomiting and purging. The shadow cast by the foliage of this wild tree raises a blister upon the skin, the same as the *guão* (*Rhus Metopium*), which is a wild shrub, very abundant in the Antilles.

[c] Those Caribbee Indians possessed also the art of making household utensils of clay, which they baked in kilns like the potters of Europe.

"The habits of these Caribbees are beastly.

"There are three islands: this one on which we are is called by the natives *Turuqueira*;[b] the other, which was the first we saw, is named *Cayre*,[c] and the third, *Ayay*.[d] There is a general resemblance among the natives of these three islands, as if they were of the same lineage. They do no harm to one another, but each and all of them wage war against the inhabitants of other neighbouring islands, and for this purpose sometimes they go as far as a hundred and fifty leagues in their canoes,[e] which are a narrow kind of boats, each made out of a single trunk of a tree. Their arms are arrows, in place of iron weapons, and as they have no iron, some of them point their arrows with a sharpened piece of tortoise-shell, and others make their arrow heads of fish spines, which are naturally barbed like coarse saws. These arms are dangerous weapons only to naked people like the Indians, causing death or severe injury, but to men of our nation they are not much to be feared.[a] . . . .

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[a] Mr. Justin Winsor, the accomplished librarian of Harvard College, in his *Christopher Columbus*, referring to the Caribbee Indians, makes the following interesting remarks:—"The contiguity of these two races, the fierce Carib and the timid tribes of the more northern islands (the Lucayans). has long puzzled the ethnologist. Irving indulged in some rambling notions of the origin of the Carib, derived from observations of the early students of the obscure relations of the American peoples. Larger inquiries and more scientific observations has since Irving's time been given to the subject, still without bringing the question to recognisable bearings. The craniology of the Caribs is scantily known, and there is much yet to be divulged. The race in its purity has long been extinct. Lucien de Rosny, in an anthropological study of the Antilles, published by the French Society of Ethnology in 1886, has amassed considerable data for future deductions."

[b] This was the island of Guadeloupe, named by Colombus *Nuestra Señora de la Guadalupe* in remembrance of the famous sanctuary of Our Lady of Guadeloupe, in the province of Extremadura, Spain.

[c] This was the island of *Dominica*, so called by Columbus from having been discovered on a Sunday (*Dies Dominica*). It is twenty-nine miles long and thirteen miles in its greatest breadth, situated at 15° 25′ North latitude and 61° 15′ West from Greenwich Observatory. It has an area of two hundred and ninety-one square miles, and belongs to England.

[d] This must have been the island now known as Martinique, though Dr. Chanca does not mention in his letter having been there. It is situated thirty miles south by west of the island of Dominica, and twenty miles north from the island of St. Lucia.

[e] That is to say, four hundred and fifty Spanish miles, or about three hundred and seventy-six English miles, which means as far as Puerto Rico.

"When the Caribbees take any boys as prisoners of war they cut off their male organs, fatten them until they grow up to manhood, and then, when they wish to make a great feast they kill and eat them up, for they say the flesh of boys and women is not good to eat. Three of those boys thus mutilated came fleeing to us when we visited the houses.[b] . . . .

"The difference between these Caribbees and the other Indians with respect to dress consists in wearing their hair very long, while the others have it clipped irregularly; also because they engrave in their heads innumerable cross-like marks and different devices, each according to his fancy; and they make those marks

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Santo Domingo and Cuba to the north, and Trinidad, Curaçao and the coast of South America to the south.

[a] Dr. Chanca did not know at that date that those arrow points of the Caribbees were poisoned with the juice of a plant, probably the inspissated sap of the manchineel tree.

[b] Herr Alexander von Humboldt, in his *Personal Narrative of Travels to the Equinoctial Regions of America*, speaking about the Caribbees, makes the following instructive observations:—"Reproaches addressed to the natives on the abominable practice which we here discuss produce no effect; it is as if a Brahmin, travelling in Europe, were to reproach us with the habit of feeding on the flesh of animals. In the eyes of the Indian of the Guaisia, the Chernvichæna was a being entirely different from himself, and one whom he thought it was no more unjust to kill than the jaguars of the forest. It was merely from a sense of propriety that, whilst he remained in the mission, he would only eat the same food as the Fathers. The natives, if they return to their tribe (*irse al monte*), or find themselves pressed by hunger, soon resume their old habits of anthropophagy. And why should we be so much astonished at this inconstancy in the tribes of the Orinoco, when we were reminded, by terrible and well-ascertained examples, of what has passed among civilized nations in times of great scarcity? In Egypt, in the thirteenth century, the habit of eating human flesh pervaded all classes of society; extraordinary snares were spread for physicians in particular. They were called to attend persons who pretended to be sick, but who were only hungry; and it was not in order to be consulted, but devoured. An historian of great veracity, Abd-allatif, has related how a practice, which at first inspired dread and horror, soon occasioned not the slightest surprise."

with sharpened bamboo sticks. All of them, both the Caribbee and the other Indians, are beardless, so that it is a marvellous thing to find one of these men with a beard. The Caribbees whom we have taken prisoners have their eyes and eyebrows stained circularly around, which I think they do for ostentation, and also because it gives them a ferocious appearance. . . . . . .

"Here almost terminate the group of islands which on the side toward Spain had not been seen before by the Admiral,[a] although we regard as a matter of certainty that there is land more than forty leagues beyond the southernmost of these newly-discovered islands.[b] We believe this to be the case, because two days before we saw the first island[c] we had observed some birds called 'rabihorcados,' which are marine birds of prey that do not sit or sleep upon the water, making circumvolutions high up in the air at the close of evening, with the object of taking their reckoning of where they are, and flying after that in a straight line towards land to sleep.[d] These birds could not have been going to spend the night at more than twelve or fifteen leagues distance from where they were, because it was already late in the evening, and the direction they took in their flight was toward the south. From all this we concluded there was land in that direction still undiscovered; but we did not go in search of it because it would have taken us out of our intended route. I hope that in a few more voyages it will be discovered.[e] . . .

"The country is very remarkable, and contains a vast number of large rivers and extensive chains of mountains, with broad, open valleys, and the mountains are very high. It does not look as if the grass is ever cut throughout the whole year. I do not think that they have any winter here, for at Christmas we found many bird-nests, some containing the young birds, and the others the egg. No four-footed animal has ever been seen in this nor in any of the other islands, except some dogs of various colours, as in our country, but in shape and size like lap-dogs. Of wild, ferocious beasts there are none.[a] . . . .

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[a] Dr. Chanca refers here to the island called by the aborigines *Borinquen*, which is the island we know to-day as Puerto Rico, and named by Columbus "San Juan Bautista" (*St. John the Baptist*). The date of its discovery was Saturday, November 16, 1493. There ended the Caribbee Islands, the first account of whose fierce and savage inhabitants was received with eager curiosity by the learned of Europe.

[b] It is truly admirable how nearly exact was this calculation of Dr. Chanca, for the comparatively large island of Trinidad, and the north coast of Venezuela, are about that distance from Martinique, the southernmost of those just discovered islands.

[c] The island of Dominica.

[d] They were frigate or man-o'-war birds (*Tachypetes aquila*), a peculiarity of which is that they persecute and compel the much larger marine birds, common pelicans (*Pelicanus onocrotalus*), to throw up what they have swallowed and eat it themselves.

[e] And that land was in fact discovered, as predicted by the learned author of this important historical document, in the very next voyage of Columbus. On the 31st day of July, 1498, he discovered the island of Trinidad, and caught a glimpse of *terra firma* at the delta of the Orinoco River.

"I came near forgetting to mention another four-footed little animal, in the colour of its hair, size, and fur, like a rabbit, but with long tail and feet similar to those of a rat.[b] These animals climb up the trees, and many of our men who have eaten them say their taste is very good.[c]

"There are many snakes, small in size, also lizards, but not so many, for the Indians consider them as great a luxury as we do pheasants. These lizards are of the same size as ours, but different in shape.

"In a small adjacent island, close by a harbour which we named 'Monte Cristo,' where we stayed several days,[d] our men saw an enormous kind of lizard which they said was as large around the body as a calf, and the tail shaped like a lance.[e] They often went out to kill it, but bulky as it was it disappeared in the thicket and got into the sea, so that they could not catch it.

"There are, both in this and in the other islands, an infinite number of birds like those we have in our country, and many others such as we had never seen. No kind of domestic fowl has been found here, with the exception of some ducks in the houses of the island of Turuqueira. Those ducks were in size larger than the ones we have in Spain, though smaller than geese, very pretty, with flat crest, and most of them as white as snow, but some also black.

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[a] The cayman and the crocodile are tho most dangerous animals found.

[b] This little animal is the *hutia* or *jutia*, as it is called in Spanish after its Indian name, a sort of mountain rat, still plentiful in those islands. There are two distinct varieties—one, large in size, called *jutia conga* (*Capromys Fournieri*), and the other, small in size, named *jutia carabali* (*Capromys Poeyi*).

[c] The present poor country people of those islands roast and eat them the same as little pigs, and their taste is really good. During the recent struggle for independence in Cuba the patriot soldiers were compelled, on account of the scarcity and poor quality of their armament, together with lack of ammunitions of war, to live in the woods, and there they killed almost all the *jutias* to provide themselves with food.

[d] This small island is called now *Cabras* or Goat Island.

[e] This big kind of a lizard was nothing else but an alligator, which is the corrupted English word from the Spanish *el lagarto* (*Alligator lucius*).

"Fish is abundant here, an article of food of which we were in great need, for our provision of meat was running short; and it is a singular kind of fish, more wholesome than those we have in Spain. The climate does not allow the fish to be kept from one day to another, for all animal food speedily becomes unwholesome on account of the great heat and dampness.

"Large quantities of vegetables have been planted, and they certainly attain a more luxuriant growth in eight days here than they would in Spain in twenty.

"We are frequently visited here by a great number of Indians, accompanied by their *caciques*, who are their captains or chiefs, and many women. They all come loaded with *ages*, a sort of turnip, very excellent food, which they cook and prepare in various ways. This food is very nutritious, and has proved of the greatest benefit to us all after the privations we endured when at sea, which in truth were more severe than man ever suffered. . . . .

"The little time that we have spent on land has been so much occupied in seeking for a place to establish the settlement,[a] and in providing ourselves with things we needed,[b] that we have had little opportunity of becoming acquainted with the natural productions of the soil. In spite of this drawback, we have already seen many marvellous things. For instance: trees bearing wool, of a sufficiently fine quality (according to the opinion of those who are acquainted with that industrial art) to be woven into good cloth.[a] And of this kind of trees there are so many that we might load all our vessels with wool, though it is somewhat difficult to gather it because these trees are very thorny, but some means can easily be found to overcome that difficulty.

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[a] They found at last a convenient place for the purpose, in the selection of which the professional advice of Dr Chanca was duly consulted. It was on the shore of a good bay on the North Coast, on high ground, with two rivers of potable water near by, and the back part well closed by the thick growth of an impassible forest that protected it from being set on fire by the Indians on a night attack. There in that spot was immediately commenced the building up of the very first Christian town of the New World, to which Columbus gave the appropriate name of Isabella, his great protectoress. The ruins of the stone buildings in a solitary waste constitute to-day the melancholy relic of that historical locality.

[b] The principal of those things needed were fresh vegetables and fish, and the expeditionists soon got them. The vegetable gardens planted were speedily clothed in green, producing plentifully onions and pumpkins, radishes and beets. Sugar-cane, the first ever planted in American soil, and brought by those colonizers from the Canary Islands, had also been sown, and came up splendidly.

"There are also cotton trees, as large as peach trees, which all the year round produce cotton, and in abundance.[b]

"We found trees which produce wax, as good both in colour and smell as bees-wax, and equally useful for burning; indeed, with very little difference between the one and the other.[c]

"There is a vast number of trees which yield surprisingly fine turpentine.[d]

"Tar is found in abundance, of very good quality too.[e]

"We discovered trees which, in my opinion, bear nutmegs, but at present without fruit on them, and I say so because the bark tastes and smells like nutmegs.[f]

"I saw one root of ginger, which an Indian was carrying around his neck.[g]

"There is aloes too, though not of the same kind as the one we are acquainted with in Spain, but nevertheless a species of aloes that we doctors use.[a]

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[a] The tree to which reference is made here is called *ceiba* in Spanish, *pojot* in the French West India Islands, and "five-leaved silk-cotton-tree" in English (*Bombax ceiba*, Lin.). It grows to an immense size, is beautiful in appearance, and has its seeds enveloped in a cottony substance, light as feather, which fly in the air to a great distance.

[b] Probably, the species known now as Sea Island cotton, still to be found wild in some localities in Cuba, Puerto Rico and Santo Domingo. All varieties of *Gossypium* require a dry and sandy soil, and generally the plant flourishes most luxuriantly near the sea coast.

[c] This tree is the wax-palm (*Ceroxylon andicola*), the stem of which is covered with a secretion consisting of two-thirds resin and one-third wax.

[d] One of those trees, besides the many varieties of pine trees (genus *Pinus*), was called by the native Indians *hóbo* or *jóbo* (*Spondias lutea* or *Décandrie pentagynie*), which is the "mombain" with yellow fruit of the French botanists, a bulky tree belonging to the Terebinthinaceae family, very abundant in the Antilles and resembling somewhat the cedar.

[e] More correctly asphalt or mineral pitch, of which there are several lakes in the Antilles, notably the one in the island of Trinidad, about three miles in circumference.

[f] A species of Myristica, but certainly not the *Myristica moschata* of the Molucca Islands. Probably it was the tree called by the aborigines *caumaná*, whose leaves have a smell like that of fennel, the bark a sweet taste, and in general appearance resembles the nutmeg tree.

[g] Truly, this must have been the dry, wrinkled rhizome of the ginger plant (*Zingiber officinalis*), so well known in Jamaica.

"A sort of cinnamon has likewise been found, but, to speak truthfully, it is not of such a fine quality as the one we have in Spain; or, perhaps, this is so because now it is not the proper season to gather it, or the soil in which it was found growing in this vicinity is not well adapted.[b]

"We have also seen here some yellow mirabolans.[c] At this season they are lying under the trees, and as the ground is very damp they are all rotten, and have a very bitter taste, due, in my opinion, to their state of decomposition; but the flavour of those parts which in spite of that have remained sound is the same as that of the genuine mirabolan.

"There is, besides, very good kind of mastic.[d] . . . . .

"In our present position, we are in the neighbourhood of many mines of gold, not any one of which, we are told, is more than twenty or twenty-five leagues off. The Indians say that some of them are in Niti, a place in the possession of Caonabó, that Indian king who killed the Christians;[e] other mines are located in another place called Cibao, which, if it please God, we shall see with our own eyes before many days have passed; indeed, we should go there at once were it not because we have so many things to attend to that there are not enough men among us to do it at present. And this is in consequence of one-third of our people having fallen sick within four or five days after we landed here, which misfortune I think has happened principally on account of the toil and privations of the journey, to which must be added the variableness of the climate;[f] but I trust in our Lord to be able to restore all the sick to health.[g] . . . . .

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[a] The species called Barbadoes aloes (*Aloes hepatica*), which is still considered of an inferior quality to *Aloes Socotrina*.

[b] That was probably the wild American cinnamon (*Nectandra cinnamomoides*) or perhaps the white cinnamon of winter (*Canella alba*).

[c] They most likely were the fruit of the *Myrabolanus citrino* of Gartner.

[d] A valuable resin exuding from the mastic tree (*Pistacia lenticus*).

[e] This Indian chief was a Caribbee by birth, and ruled over the province of Hispaniola, called by the natives *Mangana*, in which were the mountains named Cibao. He was the cacique who killed the thirty-eight men left by Columbus in that island on his return to Spain from his first voyage of discovery to America.

[f] The climate suddenly changes in those West India Islands from being very hot and dry to comparatively cool and very damp, due to long-continued and heavy rain.

[g] Columbus himself was also sick with malarial fever for a few days, and

"None of the natives of all these islands we have visited possess any iron. They have, however, many implements, also hatchets and axes—all made of stone, which are so handsome and well finished that it is a wonder how they can contrive to make them without employing iron. . . . .

"Their principal food consists of a sort of bread made of the root of a herb, half-way between a tree and grass,[a] and the *age*, which I have already described as being like the turnip, and a very good food certainly it is.[b] They use, to season it, a vegetable called *agí*,[c] which they also employ to give a sharp taste to the fish and such birds as they can manage to catch, of the infinite variety there are in this island, dishes all of them that they prepare in different ways.

"They have, besides, a kind of grain, in appearance like hazelnuts, very good to eat.[d]

"They eat all the snakes, lizards, spiders, and worms that they find upon the ground, so that, according to my judgment, their beastiality is greater than that of any beast on the face of the earth.

"The Admiral had at one time determined to leave the search

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seven months later suffered a dangerous malady, which I have ventured to diagnosticate as typhus or "ship fever" in my monograph on *The Medical History of Christopher Columbus*, which is the first and the only one existing, read before the First Pan-American Medical Congress, held at Washington, D.C., in 1893, and published in the English language in "The Journal of the American Medical Association" for May 5, 1894, and in the "Dublin Journal of Medical Science" for August and September, 1894. It has also been published in other languages.

[a] I think Dr. Chanca alludes here to the maize of Indian corn (*Zea mays*), of which the aborigines of Hayti made a kind of bread.

[b] This farinaceous root is the *yuca*, called in English yucca or Adam's needle, also known as Barbadoes nut, a fibrous tuber, very esculent, of which there are in the West Indies two well-known kinds, the sweet (*Yucca gloriosa*) and the sour (*Yucca filamentosa*), this last one being cathartic and somewhat poisonous. It contains a large quantity of starch, which is obtained from the juice of the grated yucca, and from the fibrous residue is prepared the *casabe* or cassava (a corruption of the Spanish word) in the shape of very large, round and thin sort of crackers, called in Spanish *tortas de casabe*. This old kind of Indian bread is still made in Cuba, Puerto Rico, Santo Domingo, &c., and is very much relished.

[c] Red pepper, called *chili* in Mexico (*Capsicum frutescens*).

[d] It was not a grain at all, but the *palmiche* (in Spanish), which is the small nut of the royal palm tree, growing in bunches like the fruit of the date palm. It is very much used in Cuba, Puerto Rico, Santo Domingo and the other West India Islands to fatten pigs with. Very likely the Indians ate it as food, and from that fact Dr. Chanca got his notion of its being a grain. Really, that nut looks like a small, green hazel nut.

for the mines until he had first dispatched the ships that were to return to Spain, on account of the great sickness which had prevailed among our men,[a] but afterwards he resolved to send two detachments under the command of two captains, one to Cibao,[b] and the other to Niti,[c] places where, as I have already stated, Caonabó lived and ruled. These two detachments in effect departed, and one of them returned on the twentieth of the month, while the other did so on the following day. The party that went to Cibao saw gold in so many places that one scarcely dares state the fact, for in truth they found it in more than fifty brooks and rivers, as well as upon their banks; so that the captain said anybody who wished to seek for gold throughout that province would be sure to find as much as he wanted. He brought with him specimens from the different localities—that is to say, from the sand of the rivers and its banks.[d] . . . .

"It is generally believed that by digging as we know how the gold will be found in greater compact masses, for the Indians neither know how to dig nor have they the means of digging the ground more than to a hand's depth.

"The other captain who went to the place called Niti returned likewise with news of a great quantity of gold found in three or four localities, of which he also brought some specimens with him.[e]

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[a] The expeditionists in great number were suffering from malarial fevers, about one-third of them, as Dr. Chanca states. That disease was in those days very little known, and much less its prevention and treatment. The miraculous *pulvis febrifugus orbis Americani*, also called then with the names of "The Jesuits' powders" and "The countess's powders" (*los polvos de la condesa*), were not yet known to Europeans. The existence and the wonderfully curative virtue of the mysterious "quinquina" (a corruption of the indigenous Peruvian word *kina-kina*, which signifies the *bark par excellence*, and was the remedy that saved the lives of Charles II. of England, Louis XIV. of France, and Friedrich the Great of Germany) was then at that time only known to the aborigines of the yet undiscovered kingdom of Perú.

[b] In the Lucayan language that word meant "stone mountain."

[c] The fertile valley, afterwards called by the Spaniards *La vega real*.

[d] One of those specimens of gold was a nugget that weighed nine ounces.

[e] Those specimens of gold from the valley called Niti were fewer in number and of less value than the ones brought out from the mountains of Cibao. The captains of those two small detachments of Spanish soldiers were two brave young hidalgos, one named Alonso de Ojeda, who started with only fifteen soldiers, and the other captain was Ginés de Gorbalán, who was sent back to Spain by Columbus right after his return from this expedition to Niti as a witness of the marvellous richness of Hispaniola. He took away with him to Spain the large nugget of gold weighing nine ounces.

"Thus, surely, their Highnesses the King and Queen may henceforth regard themselves as the most prosperous and wealthy sovereigns on earth, because never yet, since the creation of this world, has such a thing been seen or read of. On the return of the ships on the next voyage they certainly will be able to carry back such a quantity of gold as will fill with amazement all who hear of it.

"Here I think I shall do well to break off my narrative. And I believe that those who do not know me, and hear of these things that I relate to you, may consider me prolix and somewhat an exaggerator, but God is my witness that I have not exceeded by one iota the bounds of truth."

New York City, No. 2164 Fifth Avenue.

CHELTENHAM AS A SPA.

In the July number of the Journal of the British Balneological and Climatological Society attention is drawn to the development of Cheltenham, as a Spa, during the past year. This Gloucestershire town has, during the last half century, been noted chiefly as an educational centre, and as a place of residence for returned Anglo-Indians. For generations its waters have been known; they are comparable to those of Brides-les-Bains, St. Gervais, Homburg, Kissengen, and others which contain chiefly chloride of sodium, and the sulphate of either sodium or magnesium, or both, but of late years the town has failed to attract as many visitors anxious to undergo the "cure" as it might have done under more enterprising management. In June last the Corporation of Cheltenham inaugurated the new Central Spa, which it has established in the Town Hall, and there appears to be a good prospect of the town becoming a cure-resort of no mean order. The equable climate, beautiful surroundings—on the one hand the Cotswold Hills, and on the other the fertile Severn Valley—and the high level of culture prevailing amongst the residents, combine to make it a charming place in which to make a prolonged stay.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the Editor.

Vital Statistics

For four weeks ending Saturday, October 6, 1906.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending October 6, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,101,499. The deaths registered in each of the four weeks ended Saturday, October 6, and during the whole of that period in the several districts alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Sept. 15	Sept. 22	Sept. 29	Oct. 6			Sept. 15	Sept. 22	Sept. 29	Oct. 6	
22 Town Districts	**22.9**	**22.0**	**21.2**	**21.1**	**21.8**	Lisburn -	22.7	13.6	9.1	31.8	19.3
Armagh -	13.7	6.9	27.5	13.7	15.5	Londonderry	19.8	8.7	19.8	16.1	16.1
Ballymena	9.6	28.7	4.8	4.8	12.0	Lurgan -	22.1	26.6	13.3	13.3	18.8
Belfast -	20.2	20.1	19.4	20.5	20.1	Newry -	12.6	12.6	8.4	12.6	11.6
Clonmel -	10.3	10.3	25.6	15.4	15.4	Newtownards	34.3	17.2	28.6	17.2	24.3
Cork -	17.8	34.2	27.4	15.8	23.8	Portadown -	46.5	25.8	20.7	31.0	31.0
Drogheda -	4.1	16.3	16.3	20.4	14.3	Queenstown	26.4	6.6	19.8	26.4	19.8
Dublin - (Reg. Area)	29.4	26.8	24.5	26.0	26.7	Sligo -	4.8	14.4	19.2	4.8	10.8
Dundalk -	–	12.0	27.9	12.0	13.0	Tralee -	21.1	5.3	10.6	15.9	13.2
Galway -	27.2	15.5	19.4	27.2	22.3	Waterford -	11.7	9.7	9.7	11.7	10.7
Kilkenny -	39.3	9.8	34.3	14.7	24.5	Wexford -	32.7	32.7	23.3	32.7	30.3
Limerick -	17.8	17.8	12.3	13.7	15.4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, October 6, 1906, were equal to an annual rate of 3.3 per 1,000, the rates varying from 0.0 in eleven of the districts to 10.3 in Clonmel—the 3 deaths from all causes in that district including 2 from diarrhœal diseases. The 144 deaths from all causes in Belfast include one from measles, one from scarlet fever, 2 from whooping-cough, one from diphtheria, and 19 from diarrhœal diseases. Among the 13 deaths in Londonderry are 4 from diarrhœal diseases. The 3 deaths from all causes in Kilkenny include one from pyrexia (origin uncertain).

In the Dublin Registration Area the births registered during the week ended Saturday, October 6, amounted to 146—68 boys and 78 girls; and the deaths to 198—95 males and 103 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 27.2 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 26.0 per 1,000. During the forty weeks ending with Saturday, October 6, the death-rate averaged 22.9, and was 2.3 below the mean rate for the corresponding portions of the ten years, 1896–1905. The deaths (198) included one death from whooping-cough, one death from influenza, and 31 deaths from diarrhœal diseases, 29 being of children under 5 years of age, including 23 infants under one year of age. In each of the 3 preceding weeks, deaths from whooping-cough were one, one, and 5; deaths from influenza were one, 0, and 0; the deaths from diarrhœal diseases were 40, 34, and 31. The deaths of 3 infants under one year during the period under notice were returned as from *gastro-enteritis*, and were classified under diseases of the digestive system. The mean of the daily readings of the earth thermometer at 4 feet was 55.7°.

Four deaths were due to broncho-pneumonia and 6 to *pneumonia* (not defined).

Of 31 deaths from all forms of tuberculous disease, 5 were from tubercular phthisis, 18 were returned as *phthisis* (not otherwise defined), 3 deaths were caused by tubercular meningitis, tubercular peritonitis caused 2 deaths, and 3 deaths were due to other forms of the disease. In the 3 preceding weeks, deaths from all forms of tuberculous disease were 31, 38, and 33, respectively.

There were 5 deaths from carcinoma, and 8 deaths from cancer (undefined).

Three infants prematurely born succumbed.

There were 5 deaths from *convulsions*; of these, 4 were of infants under one year of age.

Diseases of the heart and blood vessels accounted for 24 deaths, and bronchitis was the cause of 21 deaths.

Four deaths were assigned to accidental violence.

In 4 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under 5 years of age (including 2 infants under one year old) and the death of one person aged 87 years.

Seventy-one of the persons whose deaths were registered during the week were under 5 years of age (50 being infants under one year, of whom 11 were under one month old) and 58 were aged 60 years and upwards, including 27 persons aged 70 and upwards, of whom 7 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and the Executive Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended October 6, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi-demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	Sept. 15	-	*	*	6	2	-	3	-	1	8	8	1	*	*	*	29
	Sept. 22	-	*	*	11	-	-	4	-	7	20	8	-	*	*	*	50
	Sept. 29	-	*	*	5	-	-	2	-	5	16	10	-	*	*	*	38
	Oct. 6	-	*	*	14	-	-	3	-	4	24	8	-	*	*	*	53
Rathmines and Rathgar Urban District	Sept. 15	-	*	*	-	-	-	3	-	-	-	-	-	*	*	*	3
	Sept. 22	-	*	*	1	-	-	1	-	-	2	-	-	*	*	*	4
	Sept. 29	-	*	*	1	-	-	1	-	-	1	-	-	*	*	*	3
	Oct. 6	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Pembroke Urban District	Sept. 15	-	-	-	-	-	-	-	-	-	-	2	1	*	4	-	7
	Sept. 22	-	-	-	-	-	-	2	-	-	1	-	-	*	-	-	3
	Sept. 29	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-
	Oct. 6	-	3	-	1	-	-	1	-	-	1	1	-	*	1	-	8
Blackrock Urban District	Sept. 15	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 22	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 29	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 6	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	Sept. 15	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 22	-	*	*	-	-	-	-	-	-	-	1	-	*	*	*	1
	Sept. 29	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 6	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
City of Belfast	Sept. 15	-	*	*	14	-	-	3	2	8	13	6	-	*	*	*	46
	Sept. 22	-	*	*	23	-	-	2	-	4	8	8	-	*	*	*	45
	Sept. 29	-	*	*	39	-	-	5	-	8	20	9	-	*	*	*	81
	Oct. 6	-	*	*	36	-	-	8	-	6	15	5	-	*	*	*	70

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Two cases of measles were admitted into hospital during the week ended October 6, 1906, 2 were discharged, and 5 cases remained under treatment at its close.

Nineteen cases of scarlet fever were admitted to hospital, 7 were discharged, and 72 cases remained under treatment at the close of the week. This number is exclusive of 17 patients in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus was admitted to hospital during the week, and 2 cases remained under treatment at its close.

Seven cases of diphtheria were admitted to hospital, 5 were discharged, there was one death, and 20 patients remained under treatment at the close of the week.

Nineteen cases of enteric fever were admitted to hospital, 6 were discharged, there were 3 deaths, and 74 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospital, 8 were discharged, there were 3 deaths, and 28 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, October 6, in 76 large English towns, including London (in which the rate was 15.5), was equal to an average annual death-rate of 17.1 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17.2 per 1,000, the rate for Glasgow being 18.4, and for Edinburgh 15.6.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended October 6. From this Return it appears that of a total of 34 cases notified 15 were scarlet fever, 6 diphtheria, 8 erysipelas, and 5 enteric fever. Among the 263 cases of infectious diseases in hospital at the close of the week were 108 cases of scarlet fever, 26 of enteric fever, 11 of measles, 38 of diphtheria, 2 of membranous croup, 14 of erysipelas, and 5 of whooping-cough.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of September,* 1906.

Mean Height of Barometer,	30.201 inches.
Maximal Height of Barometer (27th, at 9 a.m.),	30.602 „
Minimal Height of Barometer (14th, at 11 p.m.),	29.464 „
Mean Dry-bulb Temperature,	55.7°.
Mean Wet-bulb Temperature,	53.2°.
Mean Dew-point Temperature,	50.8°.
Mean Elastic Force (Tension) of Aqueous Vapour	.375 inch.
Mean Humidity,	84.4 per cent.
Highest Temperature in Shade (on 2nd),	77.8°.
Lowest Temperature in Shade (on 26th),	41.0°.
Lowest Temperature on Grass (Radiation) (28th)	37.1°.
Mean Amount of Cloud,	45.7 per cent.
Rainfall (on 7 days),	.696 inch.
Greatest Daily Rainfall (on 11th),	.197 „
General Directions of Wind,	W., N.W., E.

Remarks.

Not since the year 1865 has there been so fine, warm, and dry a September. This month was also warm, dry and summerlike in 1898, recalling memories of the wonderful September of 1865, when the mean temperature in Dublin reached 61.4°, and the rainfall was only .056 inch on 3 days. The month opened with torrid heat in England—on the 1st, the thermometer rose to 91° in London and at Manchester, 92° at Oxford, 93° at Nottingham, and 95° at Oundle, Northamptonshire; on the 2nd, the highest temperatures were 91° in London, 92° at Oxford and Hillington, 94° at Canterbury and Nottingham, and 96° at Bawtry, Northamptonshire. In Ireland also very unusual warmth for the time of year was felt at the beginning of the month; in Trinity College, Dublin, the thermometer rose to 79.4° on the 1st, and to 80.5° on the 2nd. Another striking feature was the persistent anticyclone of the second half of the month and the absolute drought which lasted from the afternoon of the 15th till 2 a.m. of the 1st of October.

In Dublin the arithmetical mean temperature (57.1°) was 1.2° above the average (55.9°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 55.7°. In the forty-two years ending with 1906, September was coldest in 1886 and 1892 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°) and 1898 (M. T. = 60.2°). In 1905 the M. T. was 54.9°.

The mean height of the barometer was 30.201 inches, or 0.291 inch above the corrected average value for September—namely, 29.910 inches. The mercury rose to 30.602 inches at 9 a.m. of the 27th, having fallen to 29.464 inches at 11 p.m. of the 14th. The observed range of atmospheric pressure was, therefore, 1.138 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 55.7°, or 5.4° below the value for August, 1906. Using the formula, *Mean Temp. = Min.* × (*Max.—Min.* × .476), the mean temperature was 56.7°, or 1.1° above the average mean temperature for September, calculated in the same way, in the thirty years, 1871–1900, inclusive (55.6°). The arithmetical mean of the maximal and minimal readings was 57.1°, compared with a thirty years' average of 55.9°. On the 2nd the thermometer in the screen rose to 77.8°—wind, W.; on the 26th the temperature fell to 41.0°—wind, calm. The minimum on the grass was 37.1° on the 28th.

The rainfall was .696 inch on 7 days. The average rainfall for September in the thirty-five years, 1866-1900, inclusive, was 2.220 inches, and the average number of rainy days was 15. In 1871 the rainfall was very large—4.048 inches on, however, only 13 days; in 1896 no less than 5.073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only .056 inch was measured on but 3 days. In 1905, 1.225 inches fell on 14 days.

High winds were noted on only 4 days, and never attained the force of a gale. The atmosphere was foggy on the 10th, 11th, 12th, 19th, 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th. Solar halos were observed on the 10th and 12th. There was an aurora borealis on the night of the 22nd.

The rainfall in Dublin during the nine months ending September 30th amounted to 16.121 inches on 146 days, compared with 19.266 inches on 145 days in 1905, 19.147 inches on 152 days in 1904, 25.269 inches on 174 days in 1903, 21.425 inches on 149 days in 1902, 18.070 inches on 124 days in 1901, 24.394 inches on 156 days in 1900, 20.948 inches on 138 days in 1899, only 10.968 inches on 112 days in 1887, and a thirty-five years' average of 19.880 inches on 145 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. Thomas H. Hill, Sch., reports that the mean height of the barometer was 30.201 inches, the range of atmospheric pressure being from 29.488 inches at 9 p.m. of the 14th to 30.601 inches at 9 a.m. of the 27th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 57.1°. The arithmetical mean of the daily maximal and minimal temperatures was 56.9°. The screened thermometers rose to 80.5° on the 2nd, and fell to 39.4° on the 28th. On the same date the grass minimum was 31.4°. On the 2nd the black bulb *in vacuo* rose to 131.8°. Rain fell on 7 days to the amount of .804 inch, the greatest fall in 24 hours being .203 inch on the 11th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 169.4 hours, of which 11.6 hours occurred on the 1st. The mean earth temperatures were—at 1 ft., 58.3°; at 4 ft., 58.0°. The one-foot thermometer ranged from 63.6° on the 3rd to 54.0° on the 28th and 29th. The four-feet thermometer ranged from 59.3° on the 4th to 56.0° on the 30th.

Mr. Robert O'Brien Furlong, C.B., reports that the rainfall at Cloneevin, Killiney, Co. Dublin, was only .34 inch on 6 days, the maximum being .10 inch on the 11th. The average September rainfall at this station in 21 years (1885–1905) was 2.079 inches on 13.3 days. Absolute drought prevailed from the 16th to the 29th, both inclusive. Up to the 30th, from January 1st, 15.17 inches of rain had fallen on 141 days. In August, 1.91 inches fell at this station on 17 days, the maximal daily fall being .38 inch on the 3rd, on which day thunder and lightning occurred. The average August rainfall in the 21 years, 1885–1905, was 3.301 inches on 17 days.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was only .338 inch on 6 days, compared with 1.055 inches on 10 days in 1905, 2.880 inches on 12 days in 1904, 3.950 inches on 20 days in 1903, 3.995 inches on 12 days in 1902, 5.420 inches on 19 days in 1901, and only .695 inch on but 4 days in 1900. The heaviest fall in 24 hours was .100 inch on the 30th. At Knockdolian the rainfall since January 1st, 1906, has been 15.793 inches on 105 days, compared with 22.113 inches on 120 days in 1905, 21.457 inches on 141 days in 1904, 27.050 inches on 154 days in 1903, 27.156 inches on 123 days in 1902, 25.105 inches on 119 days in 1901, and 30.021 inches on 140 days in 1900.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at .62 inch on 8 days, compared with 5.03 inches on 18 days in 1901, 4.09 inches on 19 days in 1902, 4.33 inches on 21 days in 1903, 2.94 inches on 19 days in 1904, and 1.07 inches on 15 days in 1905. The greatest daily fall was .20 inch on the 2nd. The mean temperature in the shade was 57.6°, compared with 55.3° in September, 1903, 56.2° in 1904, and 54.9° in 1905. The screened thermometers rose to 82° on the 1st, and fell to 39° on the 10th.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was .681 inch on 9 days, the greatest fall in 24 hours being .19 inch on the 11th. The mean shade temperature was 55.5°, the extremes being—highest, 78° on the 2nd; lowest, 38° on the 27th.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., registered .607 inch of rain on 7 days, the greatest fall in 24 hours being .160 inch on the 11th.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 1.593 inches, the heaviest fall in 24 hours being .64 inch on the 30th (really October 1).

Mr. Wm. Miller states that in the City of Cork the rainfall was

.84 inch on 8 days, or 1.86 inches below the average for September. The rainfall was greatest on the 30th, when 0.41 inch was measured. In the 9 months ended September 30, the rainfall was 20.80 inches, or 5.59 inches less than the average.

Miss Muriel E. O'Sullivan reports that at Whitecross, Stillorgan, Co. Dublin, only .500 inch of rain fell on 7 days, of which small amount .100 inch was measured on the 15th.

The rainfall recorded at the Ordnance Survey Office, Phœnix, Park, was .735 inch on 7 days, the greatest measurement in 24 hours being .190 inch on the 11th. The total amount of sunshine at this station was 182.7 hours, the most registered on any one day being 12.7 hours on the 1st.

Dr. T. H. Peyton reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall for July was 1.044 inches on 13 days, the heaviest falls in 24 hours being .291 inch on the 1st, and .270 inch on the 31st. The screened thermometers rose to 78.0° on the 22nd, having fallen to 44.0° on the 4th. The mean temperature for the month was 57.9°. In August rain fell on 10 days to the total amount of 1.571 inches. The largest daily measurement was .340 inch on the 7th. The highest temperature in the shade was 77.8° on the 31st, the lowest night reading in the screen was 48.8° on the 24th. The mean temperature was 60.8°. In September the rainfall was .669 inch on 9 days, the maximal daily fall was .146 inch on the 30th. The thermometer in the shade rose to 78.0° on the 1st and 2nd, and fell to 43.5° on the 16th. The mean 9 a.m. dry-bulb temperature of the month was 60.6°. The mean temperature was 58.0°. Up to September 30 the rainfall of 1906 amounted to 17.691 inches on 132 days.

Dr. J. Byrne Power, M.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 57.0, being 0.3° above the average for September during 19 previous years (1873–83 and 1898–1905), the extremes being—highest, 75°, on the 1st; lowest, 40.5°, on the 26th. At Bournemouth the mean was 59.7°, the extremes being—highest, 78°, on the 4th and 5th; lowest, 43°. on the 27th. The mean daily range was 13.6°, at Bournemouth it was 16.9°. The average relative humidity was 75 per cent., being 2 per cent. below the average for the month during the previous 5 years. The rainfall was 0.4 inch on 6 days, being 1.96 inches below the average for September during 16 previous years (1873-83 and 1901-1905), and the lowest precipitation for any month during these 16 years, with the exception of that for October, 1904, which was only 0.19 inch. At Bournemouth the rainfall was 0.85 on 4 days. The total duration of bright sunshine was 190.4 hours, being 77.2 hours above the average for September during the previous 5 years, compared with 172.7 hours at Phœnix Park, 198.6 at Southport, and 231.8 hours at Bournemouth.

PERISCOPE.

FORMIC ACID AND THE FORMATES.

THOUGH perhaps one of the latest additions to our Materia Medica, formic acid itself is not new. The common stinging nettle (*Urtica dioica*), whose irritant property is due to formic acid, has long been in use as a tonic and diuretic, and more recently the therapeutic properties of the acid itself have been more fully studied. Formic acid, $H.COOH$, the first member of the series of fatty acids, is prepared from oxalic acid and glycerine, by distillation. The pure acid is a colourless, pungent liquid, not unlike acetic acid in its properties, only more irritant and volatile. It is miscible with water in all proportions, burns with a blue flame, and raises a blister when applied to the skin. It has powerful reducing properties. The acid used medicinally is a 25 per cent. dilution. This has been given in doses of 2 to 10 minims, three or four times daily, well diluted with aërated water, or neutralised with an alkali. The action of formic acid is that of a powerful muscular tonic and stimulant, allied in its effects to coca or caffeine. Taken internally it dispels lassitude and allows of increased muscular exertion being performed without fatigue. In order to exhibit formic acid in a neutral form, *Liquor Formicus* has been devised. This is a neutral solution, representing 5 minims of formic acid per fluid drachm, flavoured with aromatics, the dose being 1 to 2 drachms with meals. For hypodermic use, one part of 25 per cent. acid in 1000 may be used in doses of 2 to 5 minims. The alleged property of formic acid as a tonic has led to the employment of its salts, the formates, in this connection. They produce the tonic effects of the acid, acting at the same time as a diuretic, and causing no gastric disturbance. They have been employed in phthisis and pneumonia, and have been found to improve the appetite. The tonic effect has also been noticed in ocular fatigue, an instillation of sodium formate 1 in 50 being found to improve the tone of the motor muscles of the eyeball. They have also been used in gout, as much as 22 grains of lithium formate, or 45 grains of the sodium or potassium salt, being given daily. Cases of tremor are also said to have been cured by means of the acid and its salts. *Sodium formate*, $H.COONa + H_2O$, is most used. It is a white, somewhat deliquescent, crystalline powder, freely soluble in water. The dose is $\frac{1}{6}$ to 3 grains. *Potassium, calcium* and *lithium formates* are similar in properties and doses. The calcium salt is less soluble than the others. *Strychnin formate* occurs as white crystals, very soluble in water. It combines the nerve-toning properties of strychnin with the muscular tonic action of formic acid. The dose is $\frac{1}{30}$ grain. *Elixir Formatum*, or elixir of formates, contains the sodium and calcium formates, with strychnin formate $\frac{1}{30}$ grain in each drachm, along with free formic acid. The dose is 1 drachm, three times daily, with meals. This elixir is an acid preparation, Liquor Formicus being neutral in reaction. As the formates are best prescribed in solution, either of these preparations is suitable; powders or cachets are inadmissible owing to the deliquescent character of the salts. In prescribing along with other drugs (*e.g.*, mercurials), the reducing properties of the acid and its salts should be borne in mind.—*The Prescriber*, Vol. I., No. 1, Edinburgh, October, 1906. Page 5.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Tabloid" Laxative Fruit Pastilles.

THESE pastilles present an efficient laxative in an exceptionally agreeable form, and possess distinct advantages over other aperient preparations. Each pastille contains five grains of extract of senna fruit in a suitable and pleasantly-flavoured basis. The extract of senna fruit produces a gentle laxative effect without the griping and other discomfort associated with the administration of preparations of senna leaves. "Tabloid" Laxative Fruit Pastilles form an acceptable aperient, well suited to the needs of children and of ladies in a delicate state of health, when drastic purgatives are undesirable. As the aperient principle is eliminated by the mammary gland, "Tabloid" Laxative Fruit may be given to a nursing mother in order that its effect may be exercised upon the infant. One may be dissolved slowly in the mouth and repeated as necessary. "Tabloid" Laxative Fruit Pastilles are issued by Messrs. Burroughs, Wellcome & Co., in metal boxes of two sizes.

THE DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

DECEMBER 1, 1906.

PART I.

ORIGINAL COMMUNICATIONS.

Art. XIV.—*A Note on Cryoscopy of the Urine.*[a] By Leveson-Gower Gunn, M.D., F.R.C.S.I.; Assistant Surgeon to the Adelaide Hospital.

Some years ago, when cryoscopy of the urine was first brought to the notice of the medical profession, a great deal was claimed for its utility as a diagnostic method of the functional capacity of the kidneys. Wishing to test the truth of these assertions I have during the past two years applied the method to all, or nearly all, the urinary cases that have passed through my hands since then. Cryoscopy consists in taking an accurate reading of the point at which the urine freezes—so many degrees or fraction of a degree below zero Centigrade. If the molecular concentration is slight the urine freezes very little below zero. If, on the other hand, the molecular concentration is normal or increased the fluid will require a temperature several degrees below zero to freeze it. The cryoscopic reading gives then a measure of the molecular concentration of the urine. The taking of such a cryoscopic

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[a] Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, October 26, 1906. [For discussion on this Paper see p. 450.]

reading is a comparatively simple matter. Bergman's apparatus is commonly employed. This consists of a test tube, fitted with a perforated rubber cork. In the tube are placed about two drams of the urine, enough to just cover the bulb of a thermometer, which passing through the cork almost reaches the bottom of the tube, and is thus surrounded by urine. Dipping into the fluid is a small platinum stirring rod, which, passing up through the perforated cork, can be manipulated from outside the test tube. The thermometer is graduated to the $\frac{1}{100}$ of a degree C., and ranges from zero to 6 degrees below zero. This tube, containing the urine, thermometer, and stirring rod, is placed in a larger glass vessel containing equal parts of glycerine and water. The glycerine prevents the fluid freezing, and, by completely surrounding the receptacle containing the urine, ensures its even cooling. The two tubes are placed in a large glass jar containing a mixture of one part of salt to two parts of broken ice. With this a temperature of about 10 degrees below zero can be kept up. Such is the apparatus ready for use. The observer watches carefully the column of Hg. As soon as this reaches the zero mark the stirring rod is gently moved up and down through the urine. The mercury now falls rapidly to 3, 4, or 5 degrees below zero. Then, as freezing is about to take place, some heat is set free and the column of Hg. rises quickly to about 2 degrees below zero, stays at rest for a moment, and slowly falls again. As a rule, just at the beginning of this second fall, crystals of ice can be felt forming in the urine, by means of the stirring rod. The moment these are felt the height at which the Hg. stands is read off—say, $-2.36°$. This experiment is repeated three times, the urine being allowed to thaw; by withdrawing the inner tube for a few moments the second and third readings give, let us say, $-2.32°$ and $-2.34°$. These are added together, divided by three, and the average reading of 2.34° below zero is the cryoscopic reading of the sample of urine.

This is the method:—I try to arrange that several specimens of urine are ready for examination at the one time, and find that half a dozen specimens of urine can be readily examined in this way in an hour's time.

I have taken the above as a cryoscopic reading of a normal urine. There is no standard that we can say is normal. Should, however, the urine from a mixed twenty-four hour specimen require less cold than 1.20 degrees below zero to freeze it it is probably abnormal, and the functional capacity of the kidneys is temporarily or permanently impaired.

The molecular concentration of the urine can be obtained in three ways:—

1. By a quantitative analysis of all the substances contained in the urine.
2. By taking the Sp. Gr. of the urine, care being taken to first remove all the proteids present.
3. By cryoscopy.

Has the third method which I have just described any advantage over the other two? The first method requires a skilled analyst, a considerable amount of urine, and must take a long time to carry out. For the second a considerable amount of urine is also required. In cases where the separated urines are examined (either by means of catheterising the ureters or by some separating instrument) this necessary amount of urine may be very difficult to obtain. A couple of drams of urine, on the other hand, is sufficient for a cryoscopic examination.

Two points in the diet must be watched before taking a specimen of urine for examination. The patient should get little or no solid food, and only a limited amount of liquid nourishment, for some hours before the examination is made. Observers have pointed out that cryoscopic readings of the urine are untrustworthy—(*a*) if there is great abdominal distension, either from the pressure of a large abdominal tumour or from fluid in the peritoneal cavity, and (*b*) during attacks of acute pain in either bladder, ureter, or kidney. I have examined numerous specimens of urine from patients whose kidneys I had every reason to believe were healthy, and in every case obtained normal cryoscopic readings. Other cases in which I knew both kidneys were diseased nearly always gave abnormal readings; but in two cases where the urine froze at – .80° and – .77°—that is to say showed a very low molecular concentration and apparently great loss of renal functional capacity—one has lived now for two years, and, although he has occasional slight symptoms of uræmia, is certainly no worse than he was two years ago. The other patient has been under observation now for fifteen months without showing any signs of renal insufficiency. On the other hand, in two cases where there were bad cryoscopic readings, but with no symptoms suggesting renal insufficiency, in a short time both died from uræmia.

Turning to the most interesting class of cases, those in which one kidney is diseased, and the separated urines are examined to find out if the second kidney can act sufficiently to support life. I do not think in such cases that a cryoscopic examination, although it will give considerable help, yet will justify a very definite pronouncement, for in most cases the diseased kidney is secreting a proportion of the urine. We have no proof that the second kidney, which before operation gave a normal reading, will continue to do so, when by the removal of the diseased kidney the whole of the urinary secretion devolves on it alone. The reverse equally holds good if the healthy (?) kidney gives an abnormal reading. It may only mean that it is doing all the work required of it at the time, and it may be quite capable of carrying on the entire urinary secretion.

In one case the combined urine gave a normal reading. The urine from the healthy kidney gave, before operation, readings of – 1.13° and – .99°, yet now, seven months have elapsed since the diseased kidney was removed, and the patient enjoys good health, and passes about forty-five ounces of urine, giving a reading of – 1.44°.

While I do not think the method of cryoscopy will give all the information which has been claimed for it by some observers, yet I believe that, especially when combined with a careful microscopic examination of the urine, it will prove of undoubted help in deciding for or against an operation and in the prognosis of many renal cases.

ART. XV.—*Clinical Pictures of Children's Diseases.*

By W. LANGFORD SYMES, M.D., F.R.C.P.I.; Pathologist to the Royal City of Dublin Hospital; Physician to the Orthopædic Hospital, and to the Homes for Children, &c., &c.

(*Continued from page 250.*)

NO. XXIV.

MARASMUS (PART II.).

ATROPHY; WASTING; ATHREPSIA; INANITION; CHRONIC GASTRO-INTESTINAL CATARRH; PYLORIC STENOSIS; PYLORIC SPASM; CHRONIC VOMITING; STARVATION; DUODENAL OBSTRUCTION.

ÆTIOLOGY AND PATHOLOGY.

THE diagnosis of marasmus forms the simplest and most difficult of problems. When the child is stripped the signs are at once evident. The most careful examination, however, must now be made to trace the condition to its fountain head. It must be borne in mind that the wasting is but a *symptom,* and in reality a diagnosis of "marasmus" or "atrophy" is no more complete than a diagnosis of headache or convulsions would be. A strict inquiry must be made into the prior feeding of the child, carefully noting its composition and effects, for these food cases are numerous and difficult. Frequently these marasmic infants have been splendid children when born, nine pounds weight or over, and well developed, and so continued until vomiting set in. In other cases there was previous diarrhœa. In several instances the child has suffered from a succession of illnesses. In others the prior conditions have been a second pregnancy in the mother and consequent neglect of the nursing child; illness during pregnancy where the child was born marasmic; overcrowding and poverty; and a puny condition at birth without apparent reason.

The following factors I have found to precede, or produce, many of these cases of atrophy, and, as will be seen, they fall into two main groups—viz., I. food cases, and II. congenital obstructions.

I. *Food cases; improper food; early artificial feeding.*—Early weaning and the substitution of improper food are responsible for the majority of cases. We may briefly instance the following examples prior to the onset of wasting:—(1) Child given *at birth* sago flour and cream with bread and milk, alternating with condensed milk and barley water; (2) at one week old fed on arrowroot biscuits every two hours; (3) at three weeks old bread and milk with cornflour, Swiss milk, and barley water; (4) at four weeks fed on cornflour with bread and milk; (5) at birth fed on flour and boiled milk. Such feeding invariably deranges the child's digestion. Fermentation of the starch and distension from foul gases arise, vomiting sets in, and diarrhœa becomes established. He now dwindles away, and a condition of marasmus results. Where gross errors in the feeding can be discovered in time the chances of recovery are better than in some other varieties, where the child has been under judicious care and more serious difficulties underlie the trouble.

Bearing in mind that similar errors in feeding produce other diseases, while some escape entirely, we are not yet clear as to the sequence of events which follow improper feeding. In one case it will set up a diarrhœa, in another vomiting; in a third proceed to rickets, while in a fourth marasmus will result, and in each the food may have been the same. In many cases there seems a personal idiosyncracy in the child's inabilty to digest cow's milk. These instances have frequently occurred in wealthy families, where extreme care was taken with the milk and its preparation. In many such cases cow's milk cannot be tolerated, and life can be saved only by special forms of feeding.

Pathology.—The pathology of these food cases is obscure. The organs are very small, frequently fœtal in size, *the stomach* is small, contracted, empty, and pale, the intestines are pale and bloodless, often contracted, and in extreme cases, where diarrhœa has emptied and blanched them, resemble a mass of macaroni. In other cases fermentation has frequently dilated them. The lining of the stomach and intestines may be perfectly normal to the naked eye, and no constant change can be counted upon. Ulceration, inflammation, or congestion are frequently absent. The remaining signs are secondary—viz., the wasting and atrophy. Fat is absent, and the muscles are atrophied. The lungs show small, dark areas of collapse, with neighbouring patches of emphysema, but these are common to most wasting diseases.

If microscopic sections be made in many cases the mucous membrane appears normal. Possibly in our search we miss the morbid areas, but, though serious changes may be seen, they are frequently not to be discovered. The stomach often shows a thickening of the mucous membrane. The glands are frequently destroyed. Much small-celled infiltration chokes the gland tubules by thickening and infiltration of their walls. In some places the whole mucous membrane is disorganised, and presents the appearance of a mass of disintegrated cells with a mucoid exudate on the surface which seals up the underlying diseased glands. Thus the gland tubes are compressed and their ducts choked, while their epithelial cells show cloudy swelling and granular degeneration. In many places all glandular formation has disappeared, and the mucous membrane is converted into a mass of useless degenerated structure. Some gland tubes have remained unharmed, but many are completely gone. This process is a chronic inflammation producing small-celled infiltration, destruction of gland tubules and cells by cloudy swelling, granular degeneration, and finally necrosis. There is, also, some commencing fibrosis to be seen which is proportionate to the duration of the mischief. In the intestines similar changes may be seen, but they are not so striking as in the stomach. While these microscopic appearances are tolerably frequently found the pathology of wasting and failing nutrition is not always so simply explained, for it is impossible to arrest it in many cases where careful examinations after death have failed to discover any such lesions.

Carbohydrates.—Although the saliva of young infants does possess a slight amount of amylolytic action it is not fully active in the first few months of life, for it is not called upon thus early to digest starch.

Lactose is the only form of carbohydrate present in human milk, and being soluble is assimulated with little effort of digestion. If, then, starchy or farinaceous foods be given in their unconverted forms they soon ferment, and irritation is set up. In many successful cases, however, carbohydrates in their malted or dextrinised forms (maltose, dextrins, &c.) have largely entered into the diet; but the starch must be fully converted. It is thus found in practice that the digestion of milk is aided by malted forms of carbohydrates. It has been experimentally shown by Dr. Rachford that the digestion of *casein* by the pancreatic juice is facilitated by the presence of a maltose solution, and that a milk sugar solution seems to have the same effect. Dr. Rachford[a] has also demonstrated the fact in rabbits that acid proteids undergoing digestion slightly increase the *diastatic* action of pancreatic juice. It appears, then, that both the diastatic and proteolytic actions of pancreatic juice go on more rapidly when the juice is acting in a mixture of starch and albumen than when acting on either alone, each helping to digest the other. The effect of these malted cereal diluents on casein digestion is thus continued after the milk reaches the intestine and comes under the influence of the pancreatic juice.

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[a] American Journal of Physiology. Vol. II. No. 5.

Jacobi long since taught that milk digestion goes on more satisfactorily when mixed with a decoction of cereals, and many recent writers agree with Jacobi that with these diluents the rennet and hydrochloric acid precipitate the casein in more flocculant clots, thus enabling the ferments to come into closer contact with it. We must recollect, however, that they should be dextrinised and diluted. Having regard to the frequent development of fermentation and rickets from a too exclusive use of starchy and vegetable foods without sufficient animal elements, these carbohydrates must be used with discretion. This risk, however, is worth running here, for if we could advance these dying, marasmic children towards the goal of "large rickets," however undesirable for a permanency, their lives would at least be saved. Marasmus in extreme forms is a more fatal disease than rickets. Some of the worst cases have grown fat and even bloated, and have shown in their later months many signs of rickets. I find that many can be saved only by thus passing through rickets. Under careful observation, however, the rickety tendency may be kept in check; thus, while rescuing the victim from one enemy we may successfully keep the other at bay. This rickety tendency of marasmic children must not, however, be solely attributed to starchy foods, for the prolonged malnutrition of their infancy contributes to its development. Similarly many other acute illnesses in infancy are followed afterwards by slight rickets.

Proteids.—There is in other patients an absence of ferment from gland destruction which prevents the digestion of milk proteids. In some cases the vomited material contained no free HCl., but abundant lactic acid, showing that the digestion of proteids was seriously interfered with, and such abnormal secretions of gastric juice are perfectly consistent with gland destruction. The supply of proteid is in these cases cut off at the fountain head. But in other cases no changes can be found in the stomach, there is no constant vomiting, and yet there is marasmus. In one or two such I have seen a deposit of leucin with tyrosin crystals in the urine. In health the albumoses and peptones, which are formed from proteids by the stomach, are converted by the trypsin of the pancreatic juice and by the columnar cells of the small intestine (erepsin) into leucin, tyrosin, and other amido acids. In this form they reach the liver and are reconverted by the liver cells into blood proteids, albumens, and globulins, and passed into the blood for nutrition. Now, if assimilation is arrested at the leucin stage—namely, at the liver, because it fails in metabolism—these bodies are excreted, and may be found in the urine. It is then not improbable that the marasmus here is in some part due to derangement of the liver, by which leucin and tyrosin are blocked in their metabolism. It is notable that the digestion of these infants is sometimes helped by grey powder with bicarbonate of sodium, and it is possible that some hepatic function is stimulated thereby which aids the metabolism of proteids. We must not forget that in yet another way the liver is engaged in the digestion of milk proteids. In a long series of experiments with bile and hydrochloric acid Dr. Rachford[a] showed that bile neutralises the retarding influence of combined HCl. on the *pancreatic* digestion of casein—that is to say, bile assists the pancreas in the digestion of casein, especially when the casein is partly saturated with HCl. as in health. Here we have a possible explanation of the good effect of some mercurials in the increased discharge of bile. Hydrochloric acid and pepsin are found useful when HCl. is absent from the gastric secretion and curds are seen in the stools. At the same time it checks lactic and other organic fermentations. In some cases of marasmus then we find that proteid digestion is deficient in the stomach, and that HCl. is absent from the gastric juice. In others the stomach is healthy, but the liver appears to fail in the metabolism of leucin and tyrosin; while in a third a defective secretion of bile may retard the pancreatic digestion of milk proteids.

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[a] Transactions of the American Pediatric Society. Vol. XII. 1900.

The wasting is due to the absorption of the fat, muscles (which are composed of from twenty to twenty-five per cent. of proteid), and proteids of the less important organs of the body for life purposes. It is not merely fat that is wasted in marasmus, leaving a spare muscular frame, but the proteid tissues and muscles are rapidly absorbed and attenuated.

Fat.—Wasting is first observed in the absorption of all available fat. In normal digestion its large globules are saponified by the bile and pancreatic juice (steapsin) into glycerine and fatty acids, which latter with alkalies form soaps. These soaps and glycerine are absorbed by the epithelial cells of the small intestine and reconverted into fat in the cells. The leucocytes now convey it to the lacteals of the villi and thence to the thoracic duct, into which it is discharged as fat. Finally, the muscles oxidise it into CO_2, H_2O. heat and chemical energy. This is the normal *rôle* of fat. Now in some cases of marasmus several points tend to suggest that the liver fails in its functions, and as the bile is required for the saponification of fat its imperfect secretion may aggravate the trouble. Again, the epithelial cells of the small intestine need to be healthy for the absorption and reconversion of the soaps and glycerine. We know that these cells are often diseased, so that there is a twofold obstacle to the digestion of fat. A suggestion may be derived from this—viz., the value of glycerine in food and medicines, and more attention being directed to the liver.

II. *Immaturity—Congenital Delicacy.*—Marasmus will often be found in children who have been prematurely born. This is natural, for the seventh or eighth month child cannot be fitted at birth to digest the food or cope with the external conditions which are provided by nature for his full-term brethren. Again, during the pregnancy which produces a marasmic infant the mother may have suffered from some illness, and has often been so upset by her condition that prolonged vomiting has undermined the nutrition of her unborn infant.

III. *Criminal Starvation of Insured Children.*—In some cases children are deliberately starved. These are cases where the infant is insured for a premium obtainable at death—the most pernicious of all insurances. In these cases the child is brought to hospital wasted to an extreme degree, worse than by any pathological process. One sign that has especially arrested my attention in these suspicious cases has been the existence of a full set of teeth in a wasted child where no local disease or obstruction is discoverable. The age of the child is falsely stated to be several months younger than he really is. His dwindled frame tallies with his supposed infancy, but his well-developed teeth show his true age, and his capability to have eaten proper food had it been provided. Such advanced dentition, with no discoverable organic disease, malformation, or genuine food disorder discernable to account for the marasmus, is often a circumstantial evidence of the crime. The pernicious system of "baby-farming" and putting children "out to nurse" without supervision are inducements to shift parental responsibility which frequently result in crime owing to the tempting rewards of insurance. If medical certificates were required in all cases of death, and insurance premiums only obtainable on the attainment of a certain age, these cases would not occur. Such an insurance tends to preserve life, whereas the former tempts to destroy it.

MECHANICAL OBSTRUCTIONS.

We now pass to quite a different type of cases of marasmus, and although their explanation is more simple their diagnosis is proportionately more difficult. I allude to various mechanical obstructions which block the alimentary canal. The most frequent of these abnormalities are:—(*a*) Pyloric hypertrophy, (*b*) pyloric spasm, (*c*) congenital obstruction of the duodenum, (*d*) stenosis of the œsophagus, (*e*) enlarged retropharyngeal glands.

IV. *Pyloric Hypertrophy—Congenital Hypertrophic Stenosis of the Pylorus.*—This affection leads to persistent vomiting and marasmus. It has been proved *post mortem*, found present where operation has been resorted to, and in some has been relieved thereby. The evidences of this condition should be clearly recognised. In many cases they are not difficult to discern. The following I have found to be the typical features of the trouble in its most usual form:—

(1) Persistent and chronic vomiting, frequently starting soon after birth, and even while being breast-fed. For this reason these infants are often weaned, but it usually becomes worse thereby. The vomiting is sometimes cumulative, several feeds being rejected at once, but this style of sickness is not necessarily to be expected. No food suits the child; several are tried, but all are futile, the infant vomiting each one in turn. The most skilful regulation of the food is rewarded only by disappointment. The two best forms of feeding which are likely to succeed are either a wet nurse or asses' milk. Even these are often failures, and special marasmus foods, and, in many cases operation, will alone save life.

(2) The wasting is progressive. The chronic vomiting allows little food to leak through the stenosed pylorus, and the infant is starved by its perpetual rejection.

(3) Constipation. The stools are small and few, for the tight stricture of the pylorus allows but little food to pass, most of which is then absorbed.

(4) The tongue is clean and the mouth and breath are sweet. This contrasts with other cases of vomiting from gastric catarrh, where a sour, unwholesome state of the mouth is present, and the cause of the dyspepsia is immediately seen.

(5) Pain and colic are sometimes present. The infant strains and contorts himself into weird positions, as if some abdominal obstruction were present.

(6) A dilated stomach may be found after feeding, distended like a balloon, and bulging the upper zone of the abdomen.

(7) Gastric peristalsis is often seen—the stomach contracting violently to overcome some obstruction.

(8) The pylorus *may* be felt as a small moveable lump or sausage-shaped nodule, scarcely larger than a filbert nut. To discover this the child must be quiet, and a gentle and exhaustive examination made.

(9) A condition of "water sickness" or mucoid flux often accompanies the vomiting of food. When, therefore, chronic vomiting in a young infant has persisted since birth, producing marasmus, with the foregoing symptoms constantly present, we are justified in making a diagnosis of congenital hypertrophy of the pylorus. The *post mortem* appearances are fairly uniform. Sometimes the pylorus can be felt through the abdominal wall before opening the body (Still[a]). The stomach is sometimes dilated, but always thickened and hypertrophied, and increasingly so up to the pylorus. The pylorus is enlarged, hard, and feels almost cartilaginous as if infiltrated with a new growth. The tumour-like enlargement is due entirely to muscular hypertrophy, mostly of the circular fibres, and from 4 to 7 m.m. in thickness. The lumen is pervious and frequently normal in size at the *post-mortem* examination.

V. *Pyloric spasm*, as a cause of wasting, should be clearly recognised. By this I mean a condition of temporary or spasmodic stenosis. At one time the stomach dilates after feeding, peristalsis can be seen, vomiting sets in, and a pylorus, hard and thickened, can be felt. At other times the child can take his full feed without spasm, distension, or vomiting; no peristalsis can be seen, and the former diagnosis appears erroneous. At subsequent examinations the spasm reappears, and several times these conditions are alternately observed. It is an intermittent stenosis, a temporary and occasional spasm, but persists for weeks and causes great trouble. Such cases I have frequently met with, and a diagnosis of hypertrophic stenosis has often been made, when next day all signs have vanished. I have thought well of separating these two conditions because cases of each have occurred to me, and they are not differentiated in the literature.

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[a] *Cf.* Transactions of the Pathological Society of London. 1899.

From this temporary or spasmodic variety infants recover without operation. While the attack is on and the spasm lasts the two cases are identical, but the one is intermittent, while the other is persistent. One sees so many infants with these symptoms for weeks together who eventually recover and do well they cannot all be cases of permanent hypertrophic stenosis. There is no doubt that there is pyloric obstruction, that it is temporary and occasional and not permanent, that the patients recover without operation, and that if death does occur, nothing is found.

VI. *Congenital Obstruction of the Duodenum.*—Congenital deformity of the intestinal canal, if situated high up, may produce all the symptoms I have described. This condition is extremely rare and difficult of diagnosis. I have seen only one case. By the kindness of Dr. Little I lately saw a child, in the Adelaide Hospital, of two years old, with a full set of teeth, admitted in the extremest form of marasmus, starved to a skeleton. Great care had been bestowed on the child. There was cumulative vomiting, which had persisted since birth, several feeds being rejected at once. There appeared no sign of dyspepsia, the mouth being clean and sweet, and scrupulous care had been taken with the food. There was a dilated stomach with peristalsis markedly visible at the bedside, but a second bulging protruded the parietes to the right of the rectus muscle which was peculiar, giving an hour-glass shape to the prominence. There had been obstinate constipation. The child was moribund. The chief probability appeared to be congenital hypertrophy of the pylorus, and a careful examination of the pylorus was enjoined if autopsy were permitted. Dr. Little afterwards very kindly sent me the following epitome of the conditions found at the *post-mortem*: —

"A very dilated and thickened stomach; a narrowed pylorus, apparently narrowed by thickening. The first and second portions of the duodenum so distended as to appear like a second stomach. An almost complete obstruction, apparently congenital, between the second and third portions of duodenum."

VII. *Congenital Stricture of the Œsophagus.*—This rare condition must be borne in mind where marasmus is accompanied by persistent vomiting. Dr. R. C. Dun exhibited an interesting example to the Society for the Study of Disease in Children in 1905.[a] It was that of a boy, aged eighteen months, who vomited everything for three weeks previously. Rapid wasting ensued. He was ravenously hungry, swallowed milk greedily, but all was regurgitated *still alkaline in reaction.* Occasionally some milk was retained. Bougies discovered an obstruction 7½ inches from the teeth. A gastrostomy was performed, and feeding kept up by fistula, and later a gastrotomy was undertaken in order to pass bougies upwards and dilate the stricture from below. The finger, however, could not reach the obstruction, but a bougie was arrested half an inch beyond the finger tip. The child survived the operation, but subsequently contracted pneumonia and measles, became extremely wasted, and died. The autopsy revealed a stricture of the œsophagus one inch above the diaphragm, the lumen being very narrow, and just allowing the passage of a small probe. Other cases have been reported. No treatment has been of any avail.

VIII. *Enlarged Retropharyngeal Glands.*—Retropharyngeal adenitis and abscess may mislead one for a considerable time and produce intense marasmus. Dr. Cotter, of St. Vincent's Hospital, New York, has cited a good example.[a]

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[a] *Cf.* Reports of the Society for the Study of Disease in Children. Vol. V. 1905. P. 218.

I. R., a foundling, of eight months, seen on December 8th, 1901, with enlarged cervical glands, nasal discharge, and mouth-breathing. On January 25th, 1902, adenoids were removed. February 14th, cervical glands were enlarged, and in front of R. sternomastoid there appeared a small, soft, compressible swelling, with a slight induration in the right pharyngeal wall. A diagnosis of retropharyngeal adenitis and possibly abscess was made, but there was no evidence of pus, and the temperature had never reached 100° F. March 5th, swelling was larger, and the head was thrown back. March 6th, tumour still larger, fluctuating, temperature 103.8°; infant could not swallow. The child was in a state of considerable marasmus. Abscess was opened and 1½ ounces of pus evacuated, no disease of vertebræ being found. March 7th, temperature was 98° F., the throat was clean, and tumour had disappeared. Child recovered rapidly, and by October 5th he was in perfect health.

The case is cited because of the extreme marasmus and the chronic course.

ART. XVI.—*Further Work on the Chemistry of Viola Odorata.*[b]

By H. WIPPELL GADD, F.C.S.

IN a communication which I read before the Therapeutical Society in December, 1905, some experiments were described which, although they had failed to isolate a glucoside, provided strong evidence of the presence of one, and it was presumed that this was the viola-quercitrin described by Professor Mandelin as having the formula $C_{42}H_{42}O_{24}$. It has since, however, been pointed out to me by Mr. A. G. Perkin, of the University of Leeds, that Mandelin's formula is incorrect, and that the correct formula for viola-quercitrin is $C_{27}H_{28}O_{16}$. Mr. Perkin found this glucoside in the flowers of the Viola odorata, but in smaller amount than in those of the Viola tricolor.

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[a] *Cf.* Archives of Pediatrics. April, 1903. P. 279.

[b] Read before the Therapeutical Society on October 30, 1906.

At my request he has very kindly made some dyeing experiment with an extract which I prepared from the leaves of the Viola odorata, which was calculated, from its yield of glucose, to contain about five per cent. of viola-quercitrin ($C_{27}H_{28}O_{16}$). Pieces of cloth were mordanted respectively with aluminium, chromium, tin and iron, and were then divided into two portions. One portion of each was treated with 2 cc. of a liquid extract of violet leaves, this quantity being equal theoretically to 0.1 per cent. of viola-quercitrin. The other portions were treated with a solution containing 0.05 gramme of viola-quercitrin, obtained from eucalyptus.

On comparing the results it was found that those treated with the violet extract could hardly be seen to be dyed at all, whereas those treated with the solution of viola-quercitrin from eucalyptus were coloured deeply. It was therefore evident that there was a mere trace, if any, of viola-quercitrin present. All attempts to isolate and identify a glucoside from the violet leaves have failed, and no other principle has been detected. Attempts to isolate a ferment have also been unsuccessful. The only positive fact resulting from the experiments is that the leaves and their preparations yield, under certain conditions, glucose. Determinations have therefore been made of the amount of glucose yielded, as this is apparently an indirect measure of strength.

Thus I have found that the amount of glucose from the dried leaves is only about half that from the fresh; that the stalks of the leaves yield about five-sixths the amount obtained from the leaves freed from stalks; that the roots yield practically no glucose; that the juice, prepared by expression of the leaves, yields as much glucose as the leaves themselves; that a fresh infusion contains nine-tenths of the glucose that can be obtained from the leaves, and that the leaves can be exhausted by continuous percolation with dilute ethylic alcohol solutions, but that it takes a very large volume of the menstruum to exhaust a comparatively small quantity of leaves.

The following experiments seem to show that the yield of glucose from the leaves varies at different times of the year, within only narrow limits :—

Nov., 1905	100	parts by weight of the leaves	yielded glucose	5	parts by weight
Nov. 16, 1905	100	,,	,,	4.7	,,
Nov. 27, 1905	100	,,	,,	4.1	,,
Dec. 6, 1905	100	,,	,,	4.8	,,
April 20, 1906	100	,,	,,	5	,,
June 7, 1906	100	,,	,,	4.7	,,

Although the results of the work on the chemistry of the leaves are inconclusive and unsatisfactory, a number of physicians have found preparations of violet leaves to be active. The best form in which to present the drug is in a fresh infusion, the only objections to which are the large dose necessary to be taken and the difficulty of getting a supply of fresh leaves all the year round. Failing this, a solution may be prepared by exhaustion with alcohol, and subsequent removal of the greater part of the spirit. I described the method of making such a preparation fully in my former paper. Some objection has been taken to the amount of alcohol in it, but up to the present I have been unable to substitute any other preservative which is satisfactory.

Dr. Potts has kindly made some biological and clinical experiments with a non-alcoholic solution which I prepared for him, the results of which, I understand, he is to lay before this Society.

Medical Cyllin.

The Jeyes' Sanitary Compounds Company call our attention to the fact that they have succeeded in raising the carbolic coefficient of their medical cyllin to that of perchloride of mercury—viz., 20.0 when tested against a vigorous culture of *B. typhosus*. This is a very satisfactory result, when we remember that this preparation is guaranteed to be at least ten times less toxic than carbolic acid.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

◆

Pathology, General and Special. By R. TANNER HEWLETT, M.D.; Professor of General Pathology and Bacteriology at King's College, London. London: J. & A. Churchill. 1906. 8vo. Pp. viii and 540.

THIS is one of the most important contributions that have been made within recent years to the didactic side of English medical literature. Ever since pathology has taken its place as a special subject of lectures and examinations, the need of a good all-round text-book has been a crying one. Existing works have been either too expensive and voluminous, or too exclusively anatomical in scope, or not up to date, or (as in the case of certain American works) aggressively repulsive in style. Prof. Hewlett has succeeded in filling the gap with a book which would really seem to satisfy all reasonable requirements at a very moderate price—half a guinea. The book contains over 500 pages, printed on excellent white, smooth, glossy paper, in clear, well-spaced type, and illustrated by 28 plates, all being micro-photographs, and most of them well-selected and instructive.

As an example of the contrary qualities we would point to Plate VI. (rodent ulcer), which entirely fails to bring out the peculiarities of the special cells, the proliferation of which causes this disease. To anyone already conversant with the subject the upper diagram is characteristic enough. What is wanted, however, is a picture that will convey to a *student* the distinctive difference between rodent ulcer and squamous epithelioma. As for the lower photograph, it might be almost anything. The same remark applies to the micro-photograph of chorio-epithelioma in Plate XXIII. With these exceptions the illustrations are useful. There are none of micro-organisms—doubtless in view of those contained in the author's companion text-book of Bacteriology.

The book is divided into nineteen chapters, some of which are altogether anatomical, others mainly chemical or physiological in scope. It is precisely that happy admixture that constitutes the strong point of the work. We find not only the pathological anatomy of, say, Bright's disease, cirrhosis of the liver, and the various forms of pneumonia well and concisely dealt with, but also the pathological chemistry of gout and the purin bodies, and the pathological physiology of glycosuria, acid-intoxication, and albuminuria not less clearly and concisely expounded. In this connection we would point out that the relations between the structural formulæ of acetone, diacetic, and β-oxybutyric acids could be more distinctly brought out than they are on page 204.

On going over the book one cannot fail to be struck by the catholicity of the writer's taste. He displays no marked preference for either the anatomical, the chemical, or the physiological aspect of his subject, but metes out the same even-handed justice of treatment to all three, giving just so many details as are essential to a fair comprehension, and sacrificing what is doubtful or unnecessary. Of course there are occasional omissions—a writer and his reviewer can hardly be expected always to agree. In connection with dermoid cysts, for instance, we should have liked to see some account of Wilms' views as to their causation; and with reference to cancer in general we think that Ribberts' acquired-independence theory might properly have been noticed. The chapter on the kidney and urine is particularly good. There would seem to be some contradiction on page 410, for we find it stated in one place that "anything which raises the blood-pressure increases, anything which reduces it diminishes, the excretion (of urine)," whilst a few lines lower down we are told that excitation of the central end of the lower dorsal and upper lumbar posterior roots causes reflexly engorgement of the kidney, owing to *dilatation of the renal vessels*. This effect is seen in shock, in which the secretion of urine is much *diminished*, or for a time in abeyance. Is there not a contradiction which requires explanation between this and the former statement?

Coming towards the end of the book there is a succinct but good account of the normal and pathological anatomy of the nervous system—an account which might, we think, have been advantageously supplemented by a diagram of a neuron with its axis-cylinder, dendrites, arborisation, &c. At the end—rather out of place—comes a chapter on the pathology of bone, muscle, &c., in which we note a good account of achondroplasia, and a reproduction of Windle's classification of dwarfs; but in connection with rickets we fail to find any indication of the kind of vicious alimentation to which the disease is due, nor have we come across any mention of scurvy-rickets.

As evidence of the up-to-date character of the book we may instance the following subjects, of which an account, more or less complete, but still sufficient for comprehension, will be found scattered through its pages.

Farmer, Moore, and Walker's researches in the cytology of carcinoma (homo- and hetero-type mitosis, presence of gametoid tissue in cancers, the archoplastic vesicle and its relation to cancer "parasites," diminution of gastric HCl. no matter where the cancer is situated):

Wright's Theory of Opsonins (a reference enabling Bulloch's important work on this subject to be consulted would have been useful).

The propagation of Malta fever by goats' milk, and of yellow fever through the agency of *Stegomyia fasciata.*

The passage of Uncaria embryos through the unbroken skin (Loos).

Acidæmia as a cause of diabetic coma.

Properties and rational formula of adrenalin.

Lorrain Smith's observations on the increase in the volume of the blood in chlorosis.

Hunter's most recent views on pernicious anæmia.

Chronic cyanotic polycythæmia.

Characteristic cells in lymphadenoma (Longcope's work might have been referred to).

Rôle of *secretin* and *enterokinase* with reference to the pancreatic secretion.

Mayo Robson and Cammidge's "pancreatic reaction" of urine.

Halliburton and Mott's mode of demonstrating cholin in the blood of general paralytics.

This list might be further prolonged, but enough has been said to show how earnestly the author has striven to convey to his readers the most recently acquired knowledge.

To this rule there is one startling exception—the statement on page 123 "that the micro-organism of syphilis is unknown" (!), and we will terminate our review of Dr. Hewlett's admirable work by saying that that is the only mis-statement of any importance we have met with in reading his book. No doubt it was true when first written, but in a book dated 1906, and so well brought up to date in other respects, it ought not to have been let stand. Curiously enough, the author adds that "recently long spiral organisms (*Spirochæta pallida* of Schaudinn) have been detected in the lesions."

In conclusion, we would only add that some mention of Negri's bodies in rabies and a fuller treatment of puerperal eclampsia would be desirable in the new edition which will, we venture to predict, be speedily called for.

The Practice of Gynæcology in Original Contributions, by Eminent Authors. Edited by J. Wesley Bovée, M.D.; Professor of Gynæcology, George Washington University, Washington, D.C. With 382 Engravings and 60 full-page Plates. London: Henry Kimpton. 1906. Pp. xii and 836.

This very fine volume represents the latest American system of gynæcology. It is intended to form one of a triplet of works dealing respectively with gynæcology, obstetrics, and pediatrics, and promising to do so "in the light of the world's latest and best knowledge." The present volume is composed of contributions by seven eminent American gynæcologists—namely, J. W. Bovée, J. R. Goffe, G. B. Miller, G. H. Noble, B. R. Schenck,

T. J. Watkins, and X. O. Werder. In addition to articles on strictly gynæcological subjects, it also contain chapters on diseases of the rectum and anus, and on surgical conditions of the kidney, ureter, bladder, and urethra.

The book is too long to criticise in detail, and we must confine ourselves to a few general remarks. From an operative standpoint it appears to us to be admirable, and to leave little to be desired. The illustrations are also numerous and excellent, and of great value in elucidating the text. On the other hand, the descriptions of such conditions as tumours of the vulva and vagina are unduly curtailed.

There are a few instances of the American desire to acquire credit for originality. Thus, a patient in a bed with blocks under the foot is said to be in "Clarke's position"; whilst another patient in a bed with blocks under the head is said to be in "Fowler's position." Such pictures remind us of the fate of the Lyon *couveuse*, which was transplanted to America under the name of De Lee's incubator. Similarly, while Pawlic's cystoscope is attributed to Kelly, Nitze's cystoscope is shown without any name attached. Presumably in a later edition it will be known as the "American cystoscope." On the whole, however, the book appears to us to be an admirable one, and if its companion volumes are as well written and turned out they will prove a distinct success.

On Carbohydrate Metabolism. By F. W. Pavy, M.D., LL.D., F.R.S. London: J. & A. Churchill. 1906.

The veteran Dr. Pavy is a striking example of sustained energy coupled with a steadfast and even combative advocacy of views which he first enunciated many years ago. The present volume embodies a course of advanced lectures in physiology delivered at the University of London, May, 1905. Dr. Pavy, as we all know, is a sturdy opponent of Claude Bernard's glycogenic theory, and he now adduces fresh evidence of what he regards as its incorrectness. In the appendix he discusses the assimilation of carbohydrate into proteid and fat. He believes that he has demonstrated that the lymphocytes of the intestinal villi assimilate peptone and carbohydrate which they convert into proteid, and that the intestinal epithelial cells transform carbohydrate into fat. Photomicrographs of the villi of rabbits—(*a*) fasting, (*b*) at a period of full digestion after being fed on oats—are adduced in illustration of this thesis. Glycogen is regarded as simply a cleaved-off storage material standing in identically the same position as fat.

Pavy shows that while normal blood and urine undoubtedly contain traces of a glucose sugar, yet they must also include other carbohydrate material. For, after hydrolysis, an additional quantity of sugar is obtained—the increase being from 20 to 40 per cent. The urine is an indicator of the sugar content of the blood. It is suggested that sugar is absorbed as a proteid glucoside compound, and is carried to the tissues by the digestion-lymphocytes in the villi.

In the simplest (alimentary) form of diabetes there is a synthetic defect. Some part of the carbohydrate fails to be properly assimilated, or combined with proteid molecules, so that it reaches the circulation as sugar, and is rapidly filtered off by the kidneys. In the more severe (composite) form of diabetes there is not only a synthetic but a destructive error, and part of the uncombined sugar is broken down into the acetone series of products, which endanger the patient's life and induce risk of diabetic coma.

The literary style of the book is not very pleasing, and there is a good deal of reiteration. Yet it may be freely acknowledged that Dr. Pavy has written an interesting and suggestive book which deserves the careful attention of physiologists and physicians.

Diet and Dietetics. By A. GAUTIER. Edited and translated by A. J. RICE-OXLEY, M.A., M.D. London: A. Constable & Co. 1906.

WE have a considerable number of works on Food and Dietetics by English authors, the best of which appears to us to be that by Dr. R. Hutchison—a valuable and illuminating treatise.

The French physicians also pay much attention to dietetic questions, and look at things somewhat differently from their English brethren.

Hence we gladly welcome the authoritative text-book by Dr. Gautier, which has quickly and deservedly won its way to a second edition. Numerous additions have been made, and the book is a mine of information, and includes many original investigations by the author.

The new matter supplies an interesting table of the food-supply of Paris, 1890-1900. It also affords data regarding the coefficients of intestinal utilisation of foods, the energy requirements of the man, at rest or at work, according to the latest researches of Atwater; the mechanism of general nutrition; doctrine of ferments; the *rôle* of salts in the system; and fuller directions for the diet of invalids.

The book is divided into three parts:—Part I. Principles and Methods. Part II. Aliments. Part III. Regimens.

A special and well-known feature of French dietary is the extensive use made of horse-flesh. Gautier tells us that about 10,000 horses, asses, and mules are eaten annually in France. Horse-flesh has an alimentary value equal to that of beef if the animal has been well nourished, not over-driven, and is not too old. Its flavour recalls that of beef and venison, with a slight, sweetish taste due to its exceptional richness in glycogen and glucose. Asses' flesh is excellent. It resembles venison. The flesh of the mule resembles somewhat in its consistence and aspect that of beef, but it has a musky taste.

It is superfluous to enter into minute criticism of the subject-matter. Suffice it to say that the work is well written, carefully elaborated, and thoroughly scientific and practical.

Armed with either Gautier's or Hutchison's volumes—better still, with both—the practitioner will find himself provided with a complete encyclopædia of dietetics, which will be invaluable to him in his daily work, and he will possess a storehouse of the latest and most satisfactory information presented in a palatable and digestible form. The translation of Gautier's work is, on the whole, well done, but there are some slips and printers' errors.

The Agreement between Science and Religion. By ORLANDO J. SMITH, Author of "Eternalism," "Balance," &c. New York: C. P. Farrell.

No date is given on the title-cover of this interesting pamphlet, but the verso of the same announces the copyright date of 1906. The name of the New York publisher is strongly suggestive of Hibernian relationship, and adds its magnetism to that of the fascinating subject discussed by the author in attracting our critical sympathy, as well as our inquiring attention.

Mr. Smith has here undertaken to discuss—and reconcile the difficulties of—a problem, or chain of problems, which has never ceased to exercise the best intellect of Christendom, while furnishing many of the readiest and most effective weapons of the worst and most mischievous members of the great cosmopolitan community connoted by that loosely elastic term. The restless entity known as the human intellect has evermore been more or less interested in the mysteries of theology and cosmogony. Its achievements in these departments have been by no means uniformly progressive or convincingly satisfactory. Gloomy disappointment and troublous opposition appear to have always beset the pathway of the truly earnest thinker in his pilgrimage within their labyrinthine domains. Cynical observers have pointed out that the possession of the gift of *reason*, on which vain man has always so firmly based the assertion of his superiority over all other members of the animal kingdom, has its intellectual benefits fully balanced by the physical imperfections by which it is accompanied, and the unceasing mental worries in which it has evermore involved its proprietor. But such disagreeable reflections can never have the effect of extinguishing man's curiosity, or convincing him of the desirability of bringing his researches to a final and definitely recognised terminus. And a specially unique stimulus is given to our inquiries in such departments by the considerations indicated with vivid distinctness in Mr. Smith's prefatory remarks:—

"We may alter or improve man-made laws and systems of government. We may exercise the right of protest or of revolution. Thrones have yielded, time-honoured systems have fallen, in response to human demands. But we cannot change or amend the government of the universe. Often we raise our puny arms in protest against pain, bereavement, or misfortune, but we make no impression upon the cosmic order. We have produced no army strong enough, no conqueror great enough, to change in the slightest degree a law of Nature.

"We hunger to comprehend the government of the universe, to know whether its ways are really just or unjust, what our relations are to it, and what ground we have for hope or fear from this stern, mysterious, and unchanging power which enfolds us.

"Every religious cult, from the lowest to the highest, has had one central motive—the explanation of the government of the universe. Science, in its higher reaches, seeks to solve precisely the same problem. Religion would explain the relations of the individual soul to the government of the universe. Science would explain the relations of all truth to the supreme adjustment."

The broadly comprehensive view indicated by the mental sketch offered to the thinking reader in these sentences is to our mind satisfactory proof that it has been taken from a lofty (shall we call it a "Pisgah-"?—the wish is father to the thought) standpoint; which has, very necessarily, been reached by a slow and tortuous and toilsome ascent. Mr. Smith has evidently familiarised himself with the works of the great representative thinkers who have endeavoured to provide the clue to the twining mazes of this duplex intellectual labyrinth. His definitions and general observations are those of an experienced master, whose prolonged cultivation of mental athletics has furnished him with the characteristic ease and grace which only those who have undergone such probation can possibly display. Following a (first) section which deals with "The Foundation of Science," we have that which investigates "The Foundation of Religion." This the writer has decorated with the statements of a considerable number of the recognised experts regarding primitive beliefs and the survival of the soul after the death of the body. The arrangement has not been so gratifying to our perusal as the greater part of the balance of the booklet has proved; for although the number of witnesses called upon to testify is not so great as to constitute the mystifying "cloud," we should have enjoyed - we believe—Mr. Smith's digested summary more readily and pleasantly. This is, however, merely an expression of personal idiosyncrasy; and we are not at all prepared to follow it up by saying that our author was not much wiser in his generation when he decided on carrying out the arrangement which his paragraphs present. We have reason to know something of the mental vagaries of the myrio-cephalic individual whom he endeavours to enlighten and to persuade, and fully recognise the importance of citation—of opinions guaranteed by names which have long been loudly trumpeted in the ears of that intelligent audience whose permanent residence is in our public thoroughfares! And, accordingly, we thoroughly appreciate the value of the weight of a series of names such as Socrates, Confucius, Aristotle, Kepler, Newton, Darwin, Huxley, John Stuart Mill, Herbert Spencer, D'Alviella, Edward B. Taylor, Brinton, Grant Allen, and such like—in tilting the balance of belief in what might without them have proved a very undecided experiment in the estimation of philosophic opinions.

The questions raised by Mr. Smith—and suggested by his subject and the treatment thereof—are far too numerous, too wide, and too deep, to be discussed within the scope of a necessarily short review. So that we think it best to recommend this very suggestive pamphlet to the attention of all thinking readers, and avoid all further quotation than that of the writer's enunciation of his final focussing-adjustment of the rays of science and religion, which have for thousands of years been retained in artificial positions of relative opposition or divergence:—

"The scientific conception of *physical* action is this: *It is ceaseless and compensatory.*

"The religious conception of *human* action is this: *It is ceaseless and compensatory.*"

For the ingenious and clearly-expressed arguments with which the writer has established these positions we refer the reader to his own words.

Hints on the Management of the Commoner Infections. By R. W. MARSDEN, M.D. London: William Heinemann. 1906. Pp. 128.

AN interesting and thoughtful book dealing with the treatment of the more common infectious diseases. It is short and clear, the obvious is omitted, and numbers of useful hints are given on such points as the use of lactose and water in summer diarrhœa, the absorption of dextrose by the rectum, the influence of rest on heart complication in rheumatic fever, &c.

This book will appeal to the busy practitioner, as it is helpful and suggestive, as well as short and to the point.

A Guide to the Diseases of the Nose and Throat, and their Treatment. By CHARLES A. PARKER, F.R.C.S. London: Edward Arnold. 1906.

THIS book is stated by the author to be based on some of his lectures at the Throat Hospital. The first eighty-four pages are devoted to methods of examination and modes of treatment, including the smaller operations.

The various instruments, lamps, &c., are well illustrated, and their use is indicated. The list of nasal washes, gargles, &c., is full, and contains much information.

Section II. is concerned with the complications of the upper respiratory tract in relation to general medicine, and there is much in these chapters new and useful, both to students and practitioners, under the headings tuberculosis, syphilis, diphtheria, &c.

The author then proceeds to consider the various regions in detail, commencing with the nose, then going to nasopharynx, and so on.

He deals fully with the various conditions found, and the operations used, though perhaps the description of the older septal operations might have been curtailed, or omitted, since the submucous resection operation has come to the fore, as it has almost completely eclipsed them.

He deals, in two separate chapters, with the nasal and laryngeal neuroses, and his remarks on nasal hydrorrhœa are worthy of note.

The book is to be highly recommended, and deserves popularity.

Kimpton's Pocket Medical Formulary. By E. QUIN THORNTON, M.D. Seventh Edition. Revised. London: Henry Kimpton. N. D. (1906.) Pp. 287.

THIS edition fully maintains the high standard attained by its more recent predecessors. Formulæ containing recent drugs have been added, and every care has been taken to prescribe palatable and compatible combinations. Over two thousand formulæ are given, but the method of arrangement makes reference easy. The names of the diseases are arranged alphabetically, cross references being freely used; under each name is a group of formulæ, first those useful in simple cases, then those required by complications. Each formula has directions and indications for use.

It must be remembered that the strengths conform to the dosage of the U. S. P., and are often different from those of the B. P. In prescribing powerful drugs this must be kept in mind. It would be a great improvement to the English edition if attention were called to any important difference of strength. This could easily be done in the excellent table of doses.

Clinical Diagnosis and Urinalysis. By JAMES RAE ARNEILL, M.D. London: Hodder & Stoughton. N. D. (1905.) Pp. 244. Eighty Illustrations.

AN excellent little book, clearly arranged, clearly printed, and clearly illustrated. It gives plain directions as to instruments and reagents, a sketch of general clinical bacteriological examination; and deals wonderfully fully, considering the limited space available, with the blood, stomach, fæces, sputum, and urine.

The illustrations are well chosen and helpful, and the questions at the end of each chapter are not only useful for "quizzing," but will enable the reader to test whether he has fully absorbed the necessarily condensed information. Only processes capable of being carried out by physicians and students are given, the more elaborate processes suitable for those who devote their time to laboratory work are intentionally omitted.

Medical Electricity: a Practical Handbook for Students and Practitioners. By H. Lewis Jones, M.A., M.D., F.R.C.P.; Medical Officer in Charge of the Electrical Department in St. Bartholomew's Hospital. Fifth Edition, with Illustrations. London: H. K. Lewis. 1906. Demy 8vo. Pp. xv + 519.

So recently as May, 1905, we expressed our hearty approval of the fourth edition of Dr. Lewis Jones's "Medical Electricity," cordially recommending the volume to our readers as a well-written and reliable guide to the therapeutic uses of electricity.

In drawing attention to the new edition, it is only necessary to state that the author has spared no pains in a successful effort to keep the book well up to date. The subject-matter has been re-arranged with the object of making the work more convenient to students. We learn from the preface that sections have been added on the current waves of medical coils; on the use of mechanical means for obtaining interrupted currents of measured duration; on the introduction of drugs by electrolysis; and on the treatment of rodent ulcer by zinc ions. The chapter on X-rays has been expanded to sixty pages, and a new chapter has been added on the treatment of skin diseases by electricity. In this chapter there are references to literature as recent as June and July of 1906.

Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By ANDREW BALFOUR, M.D., B.Sc., F.R.C.P. Edin., D.P.H. Camb., Director; Fellow of the Royal Institute of Public Health; Member of the Epidemiological Society, the Incorporated Society of Medical Officers of Health, and the Association of Economic Biologists, Medical Officer of Health, Khartoum, &c. Department of Education, Sudan Government, Khartoum. 1906. Imperial 8vo. Pp. 255.

THIS is the second of a series—of which the first was noticed in these columns a couple of years ago—that bids fair to make by themselves an epoch in human (and animal) pathology; and, indeed, in the general progress and circumferential expansion of human knowledge in the widest sense. The exquisite taste displayed in the production of the volume before us, and the distinctively æsthetic care and attention to detail shown in its binding, paper, type, and illustrations—both coloured and plain—furnish an unanswerable proof that the parties responsible for the production of the same have determined that the scientific work done in the depths of the "Dark Continent," and the graphic report of the same issued from within the walls of that far-off city—which but a few years ago were consecrated by the martyrdom of England's greatest hero—will in no way yield their claim to precedence to even the best contemporaneous achievements of the scientific and artistic prophets of the leading cities of European civilisation. Who can expound the mysteries of the dealings of an unseen Providence with man? May we not hope that the blood of Gordon has baptised unto re-enlightenment and regeneration the sons of Ham, who are now found wandering around the walls of that remote city on the banks of the Blue Nile; and those who are gradually—if not always quite willingly—adapting themselves, within the enclosure of their boundaries, to the conditions and habits of European civilisation? The omen looks most auspicious; let us hope and pray that the historic and scientific sequelæ may continue to be correspondingly favourable and encouraging.

The upper cover of this volume is most appropriately stamped with an outline impression of the African Continent; and the frontispiece consists of an outlined map of the same—"showing the British possessions and the Boundaries of the Anglo-Egyptian Sudan." The second illustration is placed before the "Introduction," and represents—with almost speaking vividness—a "Dust-storm sweeping over Khartoum North, and viewed from Khartoum." It is one which could be most appropriately placed in a pictorial Bible, as strikingly demonstrative of the wondrous ways of Providence in those remote regions of sand and flood, and storm and drought. The report then soon plunges into the depths of its "Mosquito Work," which is of a variety already made fairly familiar to us in this country by the expositions of Prof. Ronald Ross. The sections which deal with "Biting and Noxious Insects other than Mosquitoes," "Some Blood-sucking Diptera from the Anglo-Egyptian Sudan" (Ernest E. Austen); "A Second Report on the Mosquitoes, Culcidæ of the Sudan" (F. V. Theobald); "Human and Animal Pests" (*id.*); and "Vegetal Pests" (*id.*), will well repay the reader's best attention. Then he is introduced to "A Hæmogregarine of Mammals," in connection with which the exquisite picture of the afflicted *jerboa* host is presented in his native desert (but apparently quite contented) loneliness, as a worthy herald to the magnificent representations of the hæmoeporidia given in Plate XI. (opposite page 98). Then not only is the jerboa (and its modified vital medium) appropriately discussed, but so also is the flea that bites that jerboa, and the uninvited and unwelcome visitor with which the blood of that lively parasite is also economically taxed and pathologically decorated. [FLAGELLATED AND VERMICULAR PARASITES OF THE FLEA (PULEX CLEOPATRÆ). PLATE XIII.—to face page 105.] "A Leucocytozöon of Mammals" is contributed with the name and surname of *L. Mauris;* "Changes in the Erythrocytes of the Jerboa" forms the subject-matter of an extremely interesting discussion; and the present state of knowledge of "Trypanosomiasis in the Anglo-Egyptian Sudan" furnishes the material of a delightfully instructive section of this volume—one which should be at once perused by every reader who is at all interested in that very important item of recent increase in the domain of scientific pathology and clinical medicine.

Everything connected with the Egyptian "*Father of Waters*"—its sources, its mouths, its unequalled longitude, its mysterious annual inundation, &c., &c.—has evermore proved one of the most productive stimuli of human curiosity and research. The "other world" science of theology which originated on the banks of the Nile, and was in great measure inspired by the life-saving properties of that stream, is very distinctly traceable in our most elaborate modern system at the present day. Geometry originated on the same territory; and their branches of mathematical science there received their best nutriment in the early periods of their struggle for survival. Let us congratulate ourselves that the cycle of providential events has rotated pathology into the same inspiring atmosphere; while expressing the hope that Dr. Balfour and his staff may continue to cultivate some subjacent soil, with results corresponding to those now before us!

Pacific Medical Journal. May and June, 1906. Vol. XLIX. No. 5 and 6. 1914 Pacific Avenue, San Francisco.

"St. Winifred's Sanatorium. Temporarily located at 1914 Pacific Avenue, pending the construction of a fireproof and earthquake-proof Sanatorium building at 1025 Sutter Street, San Francisco, Calif. Telephone, Emergency 38."

THE perusal of the title-page borne by the front wrapper of this issue of the *Pacific Medical Journal* offers a factor which, we sincerely hope, cannot fail to give to our brethren throughout the civilised world a more than passing glow of pride in the nobility and sense of duty which has always distinguished the true representatives of our profession. In every stage of its history medicine has had its heroes ready for all emergencies; their presence is an essential item in the very existence of the most altruistic and the most self-denying of all human callings—of the one profession which was practised and blessed by the Divine Saviour of humanity during His short sojourn among its fallen members. And we cordially congratulate editor, printers, publishers, and all who have taken part in the production of this truly monumental double number of our esteemed contemporary. This "Summer" or "Holiday" issue bears a date more in keeping with the production of pictorial representations of popular health resorts, semi-poetic descriptions of the meteorological attractions presented by the vicinities of certain well-known mineral springs, and judiciously-selected reports (furnished by highly-fee'd chemical analysts) on the constituent ingredients to whose presence the contents of the latter owe their rejuvenating properties. Far different has been the history of the genesis and inspiration of the contents of the pages of the thrillingly interesting periodical now before us; and this *Earthquake* number of the *Pacific Medical Journal* possesses an interest of its own which, so far as our present knowledge goes, is absolutely unique in the history of our profession. The great republic of the Western Continent has always prided itself on its furnishing of "records," and none has ever been prepared by the citizens of that most progressive of nations which, in our judgment, should more fully enlist the sympathetic congratulation of every true philanthropist and true philosopher than the freshness and vigour of the enthusiastic rebound with which San Francisco has sprung from the *débris* and ashes of its earthquake and its fire, and their still more destructive complications and sequelæ, into the joyous activity of its present resurrection. And we feel sure that every reader of this journal will cordially unite with us in spirit as we take the opportunity of thus conveying our heartfelt congratulations to our brethren of the Great Pacific Metropolis of the Far West on the brilliancy of the share which they have taken in the bearing of the burden of their terrible calamity, and the illumination of the triumph with which they have so worthily emerged from its apparently crushing effects.

It is, we feel sure, almost superfluous to point out to our readers that the most graphic account of the horrors of the great earthquake that we have hitherto seen, divested, as it here is, of all the artificial sensationalism of the cheap daily journal—white or "yellow"—will be found in the pages which we have just read. The editor also tells us, under the heading of *The New Pacific Medical Journal,* that—"With this issue the *Pacific Medical Journal* starts on a new era—the era of a new, a beautiful, and a greater San Francisco. Through the generosity of our good friends and liberal patrons it has been possible for us, after so complete a loss, to start anew at this early date." We cordially congratulate our contemporary on its new start. We feel the most absolute confidence that the race will be a brilliantly successful one; for nothing has occurred within our memory or reading which has inspired us with higher hopes of the future of the human race, and of our own profession, than the noble self-sacrifice and mutual benevolence which have been called into existence by that destructive wave which disturbed the crust of our wrinkling Mother Earth on the Pacific sea-board on the 18th of April of the present year.

Revue Médicale de la Suisse Romande. Redacteurs: JAQUES L. REVERDIN; J. L. PREVOST; Professeurs à la Facultè de Médecine de Genève; C. Piect, Médecin de l'Infirmerie du Prieure. Avec la collaboration de MM. les Prof. M. Dufour et de Cérenville, de Lausanne, anciens rédacteurs du Bulletin. Geneve: Georg & C^{ie}., Libraries—Éditeurs; Librairie de l'Université. 1905. Vingt-Cinquième Année. No. 12. 20 Decembre, 1905.

THE number of this excellent medical review which now lies before us thoroughly maintains the high critical and scientific standard which has always been so steadily held by its predecessors. Produced on excellent paper of the softly negative tint on which the wearied optical organs of the reviewer can repose without fear of flashy irritation, and printed in full-sized and exquisitely clear type, the perusal of its contents has proved an æsthetic enjoyment as well as a source of mental improvement and scientific gain. For the subjects are, all of them, interesting and important; and each has in its turn received a course of treatment, both illuminating and dignified, at the hands of an expert, who is evidently a past master of his subject—of its included matter and the most befitting methods of the manipulation thereof. Dr. Clement deals with "*L'hyperhémie en therapeutique (Méthode de Bier)*," and gives his readers the best account we have hitherto met with of this curious innovation in surgical tactics; Dr. Gassmann has effected a rejuvenescence of our old interest in "*Les bubons ramollis idiopathiques de la syphilis récente*"; Drs. Mayor and Nutritziano have combined to produce an article of exceptional value on "*Les effets cardiovasculaires du chloral, du dormiol, de l'hédonal et de l'isopral*"; and Dr. Boissonnas throws new light, in an article which deals with "*Blénorrhagie et Chorée*," on the much-discussed questions of the associations of rheumatic phenomena with those of specific urethritis and of St. Vitus's dance, respectively. The proceedings of the Swiss medical societies are reported, and there are some inevitable reviews. We have derived both pleasure and profit from the perusal of our contemporary's pages, and cordially wish it a continuation of the success which it has now commanded for a quarter of a century, and which it so thoroughly deserves. Geneva has the strongest claims on the consideration of the representatives of science in general, and of medicine in particular. The gallant little Alpine republic formed the natural stronghold of the disputatious pioneers of the most advanced thought of the Rénaissance; and the germ-laden atmospheres of its principal centres have ever since continued the serial inoculation of intellects of the most richly productive type. The city of Geneva has always borne for some of us a saddening hue of scientific sanctity from the fact that it was the seat of the martyrdom of the true discoverer of the circulation of the blood, and the actual founder of modern physiology. In another century, the Helvetian community would seem to have been guided by

Providence in the production of the most creative—the most richly and practically imaginative—intellect which had up to that date concerned itself with the discovery and diffusion of physiological knowledge—that of Albert Haller. It was surely the most appropriate compensation that could be offered to humanity for the fate of Michael Servet. And we will close this appreciative notice of our valued contemporary with the expression of a hearty wish that the Swiss strongholds of intellectual and political liberty may always continue to produce work of corresponding value.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1907, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by Thomas R. Neilson, M.D., the Secretary of the College, on or before May 1, 1907. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

ANEURYSM OF THE AORTA OF SYPHILITIC ORIGIN.

SAATHOFF (*Münchener medizinische Wochenschrift*, October 9, 1906) states the proposition that any insufficiency of the aorta in comparatively young people, in whom the presence of arteriosclerosis may be excluded with great probability, not preceded by articular rheumatism or endocarditis, must arouse the suspicion that it is due to a syphilitic aortitis. He reports seven cases of this nature, and concludes that the prophylaxis of aortic aneurysm lies in the treatment of the syphilis of the aorta.—*New York Med. Journal*, November 10, 1906.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—J. MAGEE FINNY, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—J. F. O'CARROLL, F.R.C.P.I.
Sectional Secretary—PROFESSOR WHITE, F.R.C.S.I.

Friday, October 26, 1906.

ARTHUR H. BENSON, F.R.C.S.I., in the Chair.

Pancreatitis.

DR. EARL exhibited a pancreas, omentum and portion of mesentery from a case of pancreatitis. The two latter showed well marked and extensive fat necrosis.

DR. W. G. HARVEY exhibited specimens, and stated that in his case the patient, aged about sixty, and a fairly stout man, had been complaining of vague pains in the abdomen for four or five days before coming into hospital. He had been drinking heavily, and one morning on going into a public-house fell unconscious, and was brought to the Adelaide Hospital. On admission he was quite unconscious, and breathing heavily. He died in a few minutes. *Post-mortem* showed (1) fat necrosis over the abdominal and mesenteric fat; (2) pancreas enlarged, swollen, dark, friable, and on section showed several large hæmorrhages; (3) gall bladder somewhat distended, but no gallstones. Microscopically the pancreas showed necrotic and hæmorrhagic areas.

DR. McWEENEY said it would have been interesting to learn exactly how it was that, in the specimen shown by Dr. Earl, such a relatively small amount of pancreatic destruction could have resulted in such very extensive fat necrosis. He would also have been glad to know why the fat-splitting ferment exercised its effects upon certain small and isolated areas somewhat removed from the pancreas, while it appeared to spare areas in immediate contact with the pancreas. In regard to Dr. Harvey's specimen, he (Dr. McWeeney) was under the impression that the hæmorrhagic pancreatitis was a microbic affection; but the surgeons present would be able to say whether such hæmorrhagic cases ever went on to genuine suppuration.

Dr. Parsons expressed regret that, owing to the brief time during which the two cases were under clinical observation, it would hardly be possible to obtain answers to all the questions to which they gave rise. He would have liked to know when the cases had been first recognised as pancreatitis, and whether any sugar or Cammidge's crystals were found in the urine. Such crystals might have considerable importance in the diagnosis of pancreatitis—a matter always of great difficulty.

Dr. Earl, in reply, said he had little to add to what he had already stated. They had still to find out a good deal more about the subject than they already knew. He had not had an opportunity of examining the patient's urine, as he was operated upon immediately he was admitted to hospital. He would only add, in conclusion, that the ducts were not affected in any way, and there were no gallstones.

Dr. Harvey, in reply, regretted that, owing to a hurried *post-mortem* for the Coroner, he had not been able to make a complete bacteriological examination. He had stained a section by Gram's method, but found no organisms.

Carcinoma of Breast, with Secondary Growth in Humerus.

Mr. Jameson Johnston detailed the history of a carcinoma of breast, with secondary growth in humerus, and showed microscopic slides.

Dr. McWeeney said that, while, as a rule, he was able to say right off whether or not a breast tumour, sent for examination, was a cancer, occasionally a difficult case would crop up like the one described by Mr. Johnston. He recounted, in detail, a case exhibiting characteristics which at first sight appeared to be cancer, but which turned out to be a case of interstitial mastitis. He mentioned the case as an example of the difficulty sometimes met with in cases of breast tumours. It had always occurred to him as peculiar that, although breast cancers are so common, he had never seen a case of secondary cancer of the bone diagnosticated in hospital or found in the *post-mortem* room. This was probably because such cases seldom remained in the hospital to the end.

Tricuspid Stenosis.

DR. BOXWELL exhibited a heart showing well-marked tricuspid stenosis, together with lesions of the mitral and aortic valves.

Cryoscopic Work.

MR. L. G. GUNN read a short note on cryoscopic work done during the past two years. [It will be found at page 409.]

DR. MCWEENEY said that he had not been convinced, either by his reading on the subject or by the communication just made, that the diagnostic advantages to be derived from cryoscopy of the urine would compensate a hard-worked pathologist for the labour involved in working the apparatus which had been exhibited. It was acknowledged that the lowering of the freezing-point was a valuable indication of molecular concentration; but he failed to see the necessity for the method of cryoscopy, when it was always possible for a man—who was clever and patient enough to carry out cryoscopy—to determine accurately the total solids after removal of the colloid constituents, or to take the specific gravity accurately. What applied to urine applied also to the blood; and, as the latter coagulated with considerable activity, he thought it was a difficult matter to saturate a sample with oxygen, as mentioned by the communicator. In his opinion one would have to be pretty sure of his technique in order to draw wide inferences from the delicate data and slight divergences from the normal which were obtained by cryoscopy. He considered that simple methods, such as the taking of the specific gravity, gave just as useful results; and he was glad that the knowledge which he had gained from Dr. Gunn's authoritative statement had not imposed on him any change in his personal practice.

DR. GUNN, in reply, said he had taken up the subject of cryoscopy, because he believed that by it much might be found out about the condition of the kidneys. The time and labour involved were not very great; two or three readings of half a dozen samples could be taken in an hour; and it was, of course, necessary that the *mean* of two or three should be taken. He did not deny that the specific gravity gave an equally good demonstration of the molecular concentration, but in that method all the albumen in the urine had to be got rid of. He thought the only way to advance knowledge was by trying every method, and the only way to ascertain the value of cryoscopy was by using it.

The meeting closed.

SECTION OF SURGERY.

President—Henry R. Swanzy, P.R.C.S.I.
Sectional Secretary—E. H. Taylor, F.R.C.S.I.

Friday, November 2, 1906.

The President in the Chair.

Exhibition of Cases and Specimens.

After some introductory remarks by the President there was an exhibition of cases and specimens.

Mr. J. L. Keegan exhibited a patient, aged seventy-eight, upon whom he had performed the operation of suprapubic prostatectomy. He also exhibited a boy, aged seven, whom he had trephined for intracranial abscess. *Résumé* of case:—Boy, aged seven, admitted into Jervis Street Hospital, April 26th, suffering from an extensive scalp wound caused by his having been knocked down by a tram-car. He had not lost consciousness. The wound was treated by the resident staff, and sutured. Two days after this the scalp began to slough, and suppuration established itself in spite of free drainage. On May 13th, nearly three weeks after the accident, his temperature rose to 100°, pulse 115, and he was found in a convulsed condition. The first fit began by twitching of the facial muscles on the side opposite to the wound—viz., the left side; the left hand was contracted; left leg and arm in a clonic condition; patient unconscious. The fit lasted for about ten minutes, passing off, leaving patient pale and weak. Between May 14th and 16th he had three more fits, and had begun to lose power of the left arm and leg. On May 17th he had as many as fourteen seizures. On May 18th the scalp wound was opened, exposing the bone over the Rolandic area; it looked dry and yellow, evidently necrosed. A trephine was applied over this area of bone, and as the instrument worked inwards pus welled up. On removal of the piece of bone a large collection of pus was evacuated; there was no pulsation in the area of brain substances exposed, but it was very tense. The tense dura mater was incised and a trocar passed downwards and inwards into the brain substance. Nothing escaped but a little blood. The cavity between the dura mater and bone was drained by strips of iodoform gauze. Temperature dropped from 102° to 100°, but, as he had two fits during the night, on the following morning more bone was removed with bone forceps, and drainage continued. May 21st—Pulsation visible over affected area; no more fits; temperature 100°. May 21st to 27th—Normal temperature; no fits; patient improved so rapidly that he was allowed out of bed. June 8th—A large graft of skin was taken from the boy's thigh and applied over the raw surface; this took well, and completely covered in the brain substance. Present condition—There has not been any recurrence of the fits, all signs of paralysis in limbs have disappeared, and the brain is covered by a firm skin covering. The intracranial suppuration was evidently produced by a septic osteomyelitis secondary to suppuration in scalp. There was possibly a fissured fracture of the skull, through which the pus travelled, causing the intracranial abscess to form.

The case was discussed by **Mr. R. C. B. Maunsell**, who alluded to another case of a boy from whose skull a large part of the frontal bone had to be removed on account of severe injury. A large pulsating area remained after the healing process was completed, but no subsequent operation was undertaken, and no harm resulted. He would therefore advise against future intervention in Mr. Keegan's case.

Mr. Robert Woods showed a case of a woman whose throat had been accidentally cut, fifteen months ago, through a motor car colliding with a tram-car. All the tissues from the front of the neck to the vertebral column had been severed by the broken edge of a pane of glass. He had found, on examination, that a cicatricial diaphragm grew horizontally across the pharynx, behind the hyoid bone, shutting off the mouth and pharynx above from connection with the larynx and gullet below. Respiration was carried on through a tube inserted in the thyro-hyoid space, and feeding was possible only by removing the breathing tube and passing an œsophageal tube through the opening. A small opening, large enough to admit a fine probe, was found to exist in the centre of this diaphragm. The problem to be solved was how to enable the woman to speak so that she might carry on her occupation as typewriter. Mr. Woods dilated the opening by a series of bougies till its diameter was sufficiently great to hold a tube through which she could breathe comfortably. This could not be put in without making some provision for the evacuation of the saliva which was constantly trickling into her pharynx, and which, before she came under his care, lay in a pool over the pharyngeal diaphragm. Mr. Woods showed an apparatus by which he overcame these difficulties, and which consisted in a double tube, bent in the middle, nearly to a right angle, so that it could be inserted through the thyro-hyoid opening and then upwards through the cicatricial diaphragm. The patient breathed through the large tube, while the smaller one was used for the purpose of sucking away the saliva by a suction apparatus attached to the patient's belt. The apparatus was found to work quite satisfactorily; the patient could talk, breathe and sleep very well, and was not in the least troubled by saliva trickling into her larynx.

The case was discussed by **SIR ARTHUR CHANCE** and **SIR KENDAL FRANKS**, who was present as a visitor.

MR. R. A. STONEY exhibited a case of mal-united supra-malleolar fracture after operation. *Résumé* of case:—Man, aged forty, admitted to hospital last Christmas. He was thrown off a horse ten months previously, and sustained a supra-malleolar fracture of both bones of the right leg. The bones had united in bad position, with outward displacement of the foot, causing great pain when the patient walked. At the operation callus was cut through, and the bones refractured. The foot was then brought into position and the tibia wired. Patient returned a month ago complaining of pain, on pressure, on the inner side of the leg above the ankle. This was found to be due to the wire, which was immediately under the skin. After removal of this the patient was able to walk perfectly without pain.

MR. STONEY also exhibited a cancerous growth of the rectum removed from a man aged sixty. It formed a large cauliflower-like mass, involving about three inches of the posterior wall of the rectum, and invading the region of the sphincters below. It was removed by the sacral route.

MR. HAUGHTON, in discussing the case, inquired of what material the wire consisted and why it caused trouble in Mr. Stoney's case? Great care was necessary in the sterilisation of wire employed for suturing bone, and it was his practice to keep it in the sterilising apparatus until required.

Mr. T. E. Gordon alluded to a similar case in which he had employed silver wire for suturing purposes. Subsequently it pressed against the skin and had to be removed, but it was perfectly aseptic.

Mr. Jameson Johnston showed a case of a youth, aged eighteen, who stated that he first noticed something wrong with his right hip about nine months ago, and which has been gradually getting worse. There never has been any pain in the hip, but the patient complains of pain in the inner side of the thigh and knee. At present there is some wasting of the thigh, the gluteal fold and trochanteric fossa are well marked; the great trochanter is displaced upwards at least two inches. There is some eversion and adduction; the thigh can be fully extended and almost completely flexed; adduction can be increased but abduction is impossible. These passive movements cause practically no pain. Skiagram shows a bending of the neck of the femur and the top of the great trochanter almost on a level with the acetabulum. Mr. Johnston considered the case to be one of coxa vara adolescentium.

Mr. Maunsell inquired if Mr. Johnston considered coxa vara as an entity in itself. It seemed to him either to result from tuberculous disease or rickets. It should not be regarded as a special disease.

Mr. Edward Taylor described a case under his care in Sir Patrick Dun's Hospital which presented some features very similar to Mr. Johnston's. It was evidently tuberculous in nature. He had been very much interested in the skiagram of the hip-joint exhibited by Mr. Johnston. It gave him the impression that the head of the femur was partially dislocated.

Mr. Haughton also discussed the case, and expressed the opinion that the head of the femur was partially dislocated upwards. Assuming this to be the case, the question arose, was the condition really coxa vara or erosion of the acetabulum as occurred in tuberculous disease.

Dr. Edward J. Watson considered the hip condition the result of erosion of the acetabulum.

Mr. Jameson Johnston, in reply, stated that he merely employed the term coxa vara to signify a deformity. He found it difficult to associate tuberculosis with the case, as the boy had never had pain in the hip-joint.

Mr. Haughton showed two patients in both of whom both femora had been fractured simultaneously. The first, a boy, aged seven years, a year ago was pushed against a passing lorry, and both legs passed through the spokes of the wheel, and in this position rotated with the wheel. The right femur was broken in upper third (simple), and the left in lower third (compound). In addition, most of the ligaments of left knee were ruptured, and there were two compound fractures of left leg (both bones). Further, there was a severely lacerated wound two-thirds round leg just above ankle, almost amputating it, but circulation was present in the toes, so the foot was spared. The boy can now run about vigorously, and stand on either leg alone, and has full motion in his knee-joints. (Skiagrams illustrating this case were handed round.) The second case, a man, aged sixty-two years, two years ago was wheeling a barrow of heavy stones from a sand-pit, when some tons of loose gravel and sand collapsed on him, crushing him to the ground, There were comminuted fractures of both femora in lower third, compound on left side, and rupture of internal lateral ligament of left knee. This man can now walk about strongly, and bear his full weight on either leg. His right femur was ununited three months after the accident. Torn muscle between fragments was diagnosticated and verified by operation, when the ends of bones were chiselled into a concave and convex V, and a three-inch iron screw passed through them. Primary union by bone followed, and he still retains the screw *in situ.* The treatment in the two cases was similar. The limbs were scrubbed for twenty minutes with soap and hot water, followed by ether and alcohol (or biniodide in alcohol), and the compound wounds douched for twenty to thirty minutes with normal saline alone at body temperature, several gallons being used. Silkworm gut drains were then passed into all the wounds, and sterilised dressings applied. An anæsthetic (ether) was given, and plaster of Paris bandages at once applied from the toes to the axillæ, covering both legs and trunk, leaving a suitable cleft for urination and defæcation. During the plaster application, extension was maintained in the boy's case by Dr. Halahan's apparatus, and in the man's by a modification of Professor Kocher's. Mr. Haughton considered the good results obtained in each case to be due to—first, to a purely aseptic technique in dealing with internal parts of accidental compound wounds; and secondly, to the excellent fixation afforded by primary plaster of Paris, which methods are his routine practice.

Mr. Edward Taylor, in discussing Mr. Haughton's cases, stated that, while he fully realised the excellent results which had been obtained, and for which Mr. Haughton deserved to be congratulated, it was a question whether the employment of plaster of Paris, as a rule, immediately after the occurrence of fracture was advisable. In Mr. Haughton's hands and in the hands of other hospital surgeons cases so treated had done well, but in the hands of less skilled individuals such treatment might be attended by considerable risk. His own practice was to place fractured limbs in splints for a few days before applying plaster of Paris.

Mr. Lentaigne expressed himself strongly in favour of the application of plaster immediately after the injury, and had made it a practice for years with most satisfactory results.

Mr. Johnston believed it was better to wait for the subsidence of swelling before applying plaster.

Mr. R. C. B. Maunsell exhibited three specimens of gastric carcinoma which had been excised.

Mr. W. Stevenson exhibited a necrosed humerus removed as a sequestrum, and a skiagram showing the sequestrum *in situ* before the operation.

Mr. Wheeler showed a loose body removed from the knee-joint.

Mr. W. Taylor exhibited a carcinoma of the cæcum and ascending colon which had been removed.

HYDROPS TOXICUS.

Quincke describes a case of pretty severe pernicious anæmia, of uncertain origin, in which a general hydrops developed and ran a course of two weeks; while the bodily weight increased eighteen pounds, the general condition was undisturbed, and the condition of the blood and of nutrition constantly improved. During the third week there was a general desquamation of the epidermis, like that met with after scarlet fever. Hydrops may be produced mechanically, by obstruction to the venous flow, by disturbances of the innervation, or by the influence of poisons on the tissues—*hydrops toxicus*. The case described falls under that last class. A toxic hydrops may be produced (1) through the local action of the poison (*a*) upon the vessel walls, (*b*) upon the tissue itself, (*c*) upon both; (2) through action of the poison on the nerves which supply the region in question. These may be (*a*) the nerves which supply the vessels and influence not only their size, but also the penetrability of their walls; (*b*) nerves which affect the tissue only; (*c*) nerves which affect both the vessels and the tissues. The case described seems to belong to the last named variety.—*Berliner klinische Wochenschrift*, October 1, 1906; and *New York Medical Journal*, Saturday, November 10, 1906.

THE MISTLETOE:

A Monster in Botany; a Dryad in Mythology; a Panacea in Therapeutics; and a Symbol in the Festive Folk-lore of each Rising Generation of Humanity. By JOHN KNOTT, M.A., M.D., Ch.B., and D.P.H. (Univ. Dub.); M.R.C.P.I.; M.R.I.A.; &c.

THE arrival of the approaching festive season of Xmas-tide will necessarily carry with it, in the usual course of events, the renewal of old acquaintances and the brightening up of old friendships, as well as the dutiful celebration of certain household and other customary rites. The period of the brumal solstice will not fail, even in our practical Twentieth Century, to renovate some of the fire-side associations of the antique cult of the *Lares* and *Penates*. The Yule-tide *log* on the kitchen hearth, and the *Christmas-tree* on the drawingroom floor, offer—and recall—the brightest associations in the memories of still unsullied hearts and affections; while to the members of our social community who are just about to enter on the race for life there is probably no emblem of that sacred season that will be found to elicit more thrilling sensations than will the *Mistletoe*. A strange entity in the vegetable kingdom is the genus *Viscum*, of which this osculatory plant (*V. album*) appears to be the only species of eighty—duly described and named—that has made its home on European soil. And the vagaries of its life-history have proved a puzzle to the apostles and pioneers of botany; fairly comparable, perhaps, to those planted in the pathway of the curious in bird-lore by the domestic idiosyncrasies of the cuckoo and the corncrake—to say nothing of the tropical movements of the swallow. And a somewhat corresponding haziness will probably still be noticed by the eyes of the sceptical to invest the "scientific" account which at present occupies the position of orthodox and accepted biological gospel in the case of these several stumbling-blocks of the respective pathways of the botanist and the ornithologist.

The almost weird attraction which the unique individuality of this member of the vegetable kingdom has secured for itself in the folk-lore, as well as in the botanical—and even medical—literature of so many countries, throughout a period of over two thousand years, furnishes tempting food for reflection to the philosopher as well as to the scientist. The writings of Theophrastus and of the elder Pliny prove that even long before the dawn of the Christian era the *Viscum album* was not only an object of curious and wondering inquiry to the scientific botanist, and a practical agent of special importance in the hands of the speculative bird-catcher, but a highly accredited item of the therapeutic armamentarium, and an object of the most devout attention to the priesthood of Celtic Druidism—and their unnumbered followers. In such respects it rivalled the lotos of the "Celestial" and (ancient) Egyptian empires; its Continental prominence far overtopped the relatively local eminence accorded in later times to the Irish shamrock, and to the Swiss edelweiss, respectively. In his encyclopædic compilation of the facts and fables (and art, and science, and gossip, and theory) of natural history obtainable from the literature and the folk-lore of the nations of antiquity, Caius Plinius Secundus informs his readers that just as ivy in time destroys the vitality of the trees to which it clings for support—

"The like is to bee said (in some sort) of the Misselto, although it is generally thought, that the harme thereby is not so soon seen." (*Holland's Version.*) And he proceeds to observe:—

"And this you must thinke, that this Misselto is not to be taken for the fruit of a tree, and therefore as great a wonder it is in nature as any other; for some things there be, that not willing to grow out of the earth, engender in trees, and hauing no proper place of their own habitation to seat themselves in, sojourn as it were and make their abode with others, and of this nature is the Misselto."

Then, after enumeration of the names and respective habitats of the other known parasitic plants, the grand old natural annalist goes on to say (in the quaint rendering of Philemon Holland):

"But to return againe to Misselto, there bee three kinds thereof: For that which groweth on the Firre and Larch tree is called Stelis in Eubœa, and Hyphear in Arcadia. And as for that which properly is Misselto indeed, most men are of opinion, that it groweth fast to the common Oke, the wild Robur, the Holme, wild Plumtree, and the Terebinth, and not lightly on any other trees. Howbeit, in greatest plenty it is seen upon the Oke, and that is named Dryos Hyphear. A difference there is in the Hyphear and Misselto, on what tree soeuer they are found (except the Holm and Common Oke) in regard of the sauor, which is strong and stinking in the one more than the other. The leafe of them both hath no pleasant smel, and in the Misselto it is bitter, clammy, and viscous besides . . . There is moreouer, by mens saying, another difference in Misselto—for that which groweth vpon trees, shedding their leaues in winter, loseth also his owne leaues; but contrariwise, it continueth always green vpon such as hold their leaues all the yeare long. Moreouer, set or sow this Misselto in what way soeuer you will, it will neuer take and grow; it comes only by the mewting of birds, especially of the Stockedoue or Quoist, and the Blackbird, which feed thereupon and let it passe through their body. And this is the nature of it, vnlesse it be morbified, altered and digested in the stomacke and belly of birds, it will neuer grow. It exceedeth not at any time a cubit in heighth, notwithstanding it be alwaies greene and full of branches. The male beareth a certaine graine or berry; the female is barren and fruitlesse. But sometimes neither the one or the other beareth at all."

The uncanny respect and dignified awe with which the mistletoe was invested by the Druidical mythology of the olden times are very difficult to realise in our practical and calculating twentieth century. They account for the wondrous medicinal virtues attributed to this strange plant by the members of the august hierarchy of that religion. The devotion—both theologic and therapeutic—accorded to the mistletoe in the quaint and curious cult which governed the higher emotions of the inhabitants of Western Europe before the dawn of Christian enlightenment has been sketched by Pliny in considerable detail. I again quote from the delightful version of Philemon Holland, Doctor of Physic:

"And for as much as we are entred into a discourse as touching Misselto, I cannot ouerpasse one strange thing thereof vsed in France: The Druidæ (for so they call their Diuinors, wise-men, and the state of their clergy) esteeme nothing more sacred in the world than Misselto, and the tree whereupon it breeds, so it be on Oke. Now this you must take by the way, these priests or clergymen chose of purpose such groues for their diuine seruice, as stood only vpon Okes; nay, they solemnise no sacrifice, nor perform any sacred ceremonies without branches and leaues thereof, so as they may seem well enough to be named thereupon Dryadæ in Greek, which signifieth as much as the Oke priests. Certes, to say a truth, whatsoever they find growing upon that tree ouer and besides the own fruit, be it Misselto or anything else, they esteem it as a gift sent from Heaven, and a sure signe by which that very God whom they serue giueth them to vnder-stand that He hath chosen that peculiar tree. And no maruel, for in very deed, Misselto is passing geason and hard to be found vpon the Oke; but when they meet with it, they gather it very devoutly and with many ceremonies; for first and formost, they obserue principally, that the Moon be just six daies old (for vpon that day they begin their months and new years, yea and their seueral ages, which have their revolutions every thirty yeres) because she is thought then to be of greater pouer and force sufficient, and is not yet come to her halfe light and the end of her first quarter. They call it in their language All-Heale for they haue an opinion of it, that it cureth all maladies whatsoeuer) and when they are about to gather it, after they haue well and duly prepared their sacrifices and festiual cheare, vnder the said tree, they bring thither two yong bullocks, milk white, such as neuer drew in yoke at plough or wain, and whose heads were then and not before bound by the horn; which done, the priest, arraied in a surplesse or white vesture, climbeth vp into the tree, and with a golden hooke or bill cutteth it off, and they beneathe receiue it in a white soldier's cassock or coat of armes; then fall they to kil the beasts aforesaid for sacrifice, mumbling many oraisons and praying deuoutly; that it would please God to blesse this gift of his to the good and benefit of all those to whom he had vouchsafed to giue it. Now this persuasion they have of Misselto thus gathered, and what liuing creatures soeuer (otherwise barren) do drink of it, will presently become fruitful thereupon; also that it is a soueraign countrepoison or singular remedy against all vermine. So vain and superstitious are many nations in the world, and oftentimes in such friuolous and foolish things as these."

The adoration paid to the mistletoe would seem to have been a characteristically native germ of Gallic soil, and very much to the manner born in that sunny land of uneasy faith. In his learned and interesting folio of *The Antiquities of Cornwall* (Oxford, 1754), Borlase discusses the ceremonial details recorded by Pliny, and gives a quotation (Keysler, 305) to show "that the footsteps of this custom still remain in some parts of France:"

"In Aquitania quotannis Prid. Kal. Jan. pueri atque adolescentes vicos villasque obeunt carmine stipem petentes sibi atque aliis pro voto in exordio novi anni acclamantes, Allguy, L'an neuf."

A most emphatic item of testimony to the pride of place occupied by the mistletoe in the religious mind of classical antiquity is offered by its similitude to the "golden bough" of the Sybil, as depicted by Virgil in his unique summary of the pagan "mysteries:"

> "Quale solet sylvis brumali frigore viscum
> Fronde virere nova, quod non sua seminat arbos,
> Et croceo fœtu teretes circumdare truncos:
> Talis erat species auri frondentis opaca
> Ilice: sic leni crepitabat bractea vento."
>
> (*Æneidos*, VI. 205 & seq.)

Further researches into the mythologies of later dates and of remoter regions have shown that the religious veneration for the mysterious mistletoe was cultivated by other priesthoods, and by tribes and nations of far different theologic conceptions. The lore of this strange plant has been accorded a prominent place in the Volüspa and other Scandinavian Sagas. It was with a mistletoe branch—or an arrow prepared therefrom—that the blind and heavy-headed deity Hodus aimed his deadly blow at Balder, the god of light (or benevolent principle) of northern mythology. The inspiration which dictated the use of the missile was, of course, due to the opposing principle—of darkness or evil. The plant which furnished the deadly dart grew on the eastward slope of Asgard, and was the sole agent known to gods or men—among poisons, plants, or minerals—which had not given a solemnly definite promise to Freya to prove harmless if used against the person of her son Balder. Thus it is that Scandinavian mythical lore has accounted for the death of the latter. And, accordingly, a traditional idea of the poisonous properties of the mistletoe is found to persist in remote regions of the north and west of Europe, even to the present day. Yet birds which, as all authorities on the subject are found to agree, act as "intermediate hosts" in the "planting out" stage of the life-history of the mistletoe, had been observed to suffer no ill effects from the ingestion of the fruit. Botanic specialists describe the latter as "inferior, but succulent."

Another factor in the genesis of the popular fame of the mistletoe has been contributed by the fact that its fruit has, from time immemorial, been utilised for the preparation of birdlime. This process is also best described in the language of Pliny, as "Englished" by Philemon Holland:

"Now as touching Birdlime, it is made of the berries of Misseltoe, gathered in harvest time before they are ripe, for if they should tarry stil to take showres of rain, wel might they thriue and increase in bignesse, but their strength and vertue would be gon clean, foreuer making any such glew or birdlime aforesaid. Being so gathered, as is before said, they must be laid abroad a drying, and when they be once dry, they are braied or stamped, and so put in water to steepe, and left to putrefie for the space of 12 daies or thereabout. This one thing yet in the whole world is the better for putrefaction, and serueth to good purpose. When this is done, the said berries thus putrefied and corrupt, are beaten or punned once again with mallets, in running water; by which means when they are husked and turned out of their skins, the fleshy substance within, becommeth glutinous and will stick too, in manner of glew. This is the way to make birdlime for to catch poore birds by their wings, entangled therewith, which foulers vse to temper and incorporate with the oile of walnuts, when they list to set lime twigs to take foule."

It is interesting to note in this connection that the general opinion of the ancient herbalists regarding the deposition of the seeds of the mistletoe by the thrush gave origin to the classic proverb, familiar in the days of Theophrastus and of Pliny: *turdus sibi exitium cacat*—in allusion to the fact that the thrush and blackbird were frequently caught by birdlime. We find this proverbial phrase recurring again and again, wherever allusions to the mistletoe and its ways are much in evidence. And we may add, in this connection, that in presence of the universal recognition of healthy birds as "intermediate hosts," or "half-way houses" in the life-pilgrimage of the mistletoe, a curiously inexplicable item of "vulgar error" is furnished by the widespread belief in the poisonous properties of its berries. But even modern botanical science can hardly claim to have plucked out the heart of the mystery of the germination of this curious vegetable. Boisduval tried to improve on the old classical version by announcing that the birds deposited the seeds on the branches of trees by a process of genuine vomiting! Gay and Durieu de Maisonneuve have advanced an ingenious theory—which has also been advocated by Lefèvre: "les oiseaux, après avoir saisi les baies et en avoir avalé la pulpe, cherchent, en frottant leur bec contre les branches des arbres, à se débarrasser des graines ainsi que de la substance visqueuse qui y restent attachées: d'où résulte la fixation d'un grand nombre de graines à la surface des rameaux." The mistletoe, abounding as it does in France, has received special attention from the agriculturists as well as the botanists of that country. The botanical authority last named tells us that, however deposited, the mistletoe seed (*graine du Gui*) "présente cette particularité remarquable que la radicule, au lieu d'être dirigée par la pesanteur suivant la verticale, n'est sensible qu'à la lumiere ; elle s'enfonce dans la branche, de quelque côté que la graine y ait été deposée, et toujours du côté le moins éclairé."

The same authority tells us that the farmers of the Vosges attach great value to the mistletoe of *Abies excelsa* and *A. pectinata*, in the fattening of their cattle and pigs. He also states that in other parts of France the mistletoe is given to cows for the purpose of increasing the production of milk.

The therapeutic reputation of the mistletoe continued to flourish in the middle ages, and we find Paracelsus, the thundering iconoclast of the Renaissance, as furiously emphatic in his laudation of its use in epilepsy as he was in denunciation of the classical authorities, and derived practices generally received in his day.

The celebrated botanist and herbalist, John Parkinson—whose name is well known to bibliophiles as the author of the *Paradisus in Sole*—collected into his *Theatrum Botanicum* a characteristically encyclopædic summary of the existing state of knowledge (and gossip) of the lore of the mistletoe at the date of the publication of this volume (1640). The following extracts will perhaps repay the attention of the curious reader, even in the twentieth century. He thus deals with "The Names :"

"It is called in Greek ἰξός by *Dioscorides*, and so is the Birdlime made thereof also, and ἰξία by *Theophrastus* who saith also that in *Eubœa* it is called *Stelis*, and in *Arcadia*, *Hyphear* : yet *lib*. 3, *c*. 16, of his History, he saith that *Stelis* groweth on the North Side of the *Ilex*, and *Hyphear* on the South, and so they differed from one another in some thing which he hath no where exprest, in Latine *Viscus* and *Viscum*, and so also the birdlime made of the berries, as are all these sorts called by all writers, that have written either of the two last, since *Lobel*, with their severall adjunctes. The *Arabians* call it *Debach*, *Dabuch* and *Hale*, the *Italians Vischio, the Spaniards Liga Mordago*, the *French Guy*, the *Germanes*, *Mistel* and *Eichenmistel* and *Vogelleim* the *Dutch*, *Marentacken*, and we in *English* Missellto."

This highly receptive authority is found to reject the time-honoured notion of the deposition of the mistletoe seeds by birds :

"It is since found by experience, that there is no shew of seed in that dung, they voyde upon the trees or elsewhere, being wholly altered in their bellies before the voyding, and further that Missellto groweth on trees from their own superfluous moystures, which made *Ion* the poet to call it *Sudor quercus*, even as Galles doe and Oke Apples from other sort of Okes, and have no seede of their owne, and to this purpose *Virgil Sexto Æneidos* saith: *Quale solet sylvis brumali frigore Viscum Fronde virere nova quod non sua seminat arbos.*"

His account of the therapeutics of the mistletoe (and its bird-lime) furnishes striking testimony to the persistence of popular opinion on subjects which furnished leading articles of faith to the pastors of the multitudes in pre-Christian times. It is as follows:

"Missellto is hot and dry in the third degree, the leaves and berryes doe heate and dry, and are of subtill parts, for some acrimony is in them, which overcommeth the bitternesse, the Birdlime doth mollifie hard knots, tumours, and Imposthumes, ripeneth and discusseth them, and draweth forth thicke as well as thinne humours, from the remote places of the body, digesting and separating them: but it is not of that property to separate suddainely, but after some time as *Thaspia* doth, and being mixed with equall parts of Rossin and waxe doth mollifie the hardnesse of the spleene, and healeth old ulcers and sores: being mixed with Sandarach and Ortment, helpeth to draw of foule nailes, and if quick lime and wine lees be added thereunto it worketh the stronger. The Missellto itselfe of the Oke as the best (or of the chesnut tree as *Matthiolus* saith to be as good) made into pouther, and given in drink unto those that have the falling sicknesse, doth heale them as *Matthiolus* saith, and that he had tryed it and healed many assuredly: but it is fit to use it forty dayes together: and with this caution, that the wood after it is broken from the tree, doe not touch the ground, which is in my minde too superstitious, as is their conceit also, that it hath power against Witchcraft, and the illusion of Sathan, and for that purpose, use to hang a peece thereof at their childrens neckes. *Gentilis Fulginas* and others have so highly esteemed of the vertues hereof, that they have called it *Lignum sanctæ crucis*, believing it to help the falling sicknesse, Appoplexy, and Palsie, very speedily, not only to be inwardly taken, but to be hung at their neckes, and some to hang it at their neckes, or weare it on their arme to helpe them to conceive: and saith *Matthiolus*, I have knowne ignorant emperickes, to have given the Birdlime made into pilles to swallow instead of the wood:

and further saith that he knew the Missellto that grew on a Peare tree, given to one that had the parts of his body drawne together, to doe him much good, and divers doe esteem of the Missellto that groweth on Hassell nuts, or Peares, as effectuall as that on the Oke, so it touch not the ground, for the falling sicknesse, to be taken in Wine. *Tragus* saith that the fresh wood of any Missellto bruised and the juyce drawne forth, and dropped into the eares that have Imposthumes in them, doth helpe and ease them within a few dayes: the leaves are often given to cattell, saith *Pliny*, to fatten them and purge them first: but if they be diseased they cannot continue long, and the manner of curing them lasteth for forty days in Summer."

In his *New* LONDON-*Dispensatory* (1676 and 1684[5]) the very learned and very voluble herbalist, William Salmon, devotes two paragraphs of Lib. I. (of *Herbs*) to this same subject. They are as follows:

"Viscum, Viscus, Ixia Renealmi, *’Ιξός καὶ ἰξία*, Misseltoe, hot and dry in 3°. It is of subtil parts, and good against most diseases of the Head and Spleen: The Berries strained into Oyl or Wine, and drunk, help stitches, and other pains of the sides: It purgeth viscous Humours, helps Palsies and Convulsions, is Hydrotick and Antepileptick: Outwardly, it ripens swellings and scirrhous Tumors behind the Ears, drawing from the deepest parts of the body, and digesting the humours: it mollifies old Ulcers, and ripens angry Imposthumes.

"*Viscum Quercinum*, Misseltoe, hot and dry in 2°. It mollifies and discusses; ripens Tumors behind the Ears, and other Imposthumes mixed with Wax and Rosin. Inwardly it is a specifick in the Epilepsie, and certainly cures it, by giving as much as will lie upon a six pence or nine pence in black Cherry water or Beer, early in the morning for some days near the full Moon."

The "Vulgar Errors" which the annals of natural history had ever associated with the life-history and the qualities of the mistletoe have (inevitably) received the critical attentions of the author of the *Pseudodoxia Epidemica*. He tells his readers of the "creed of the Ancients" regarding the growth of the "*Viscus Arboreus*;" "from seeds which birds, especially Thrushes and Ringdoves, let fall," and refers to the testimony of Pliny and of Virgil. He then proceeds:

"If so some reason must be assigned, why it groweth onely upon certaine trees, and not upon many whereon these birds do light. For as Exotick observes deliver, it groweth upon Almond trees, Chesnut, Apples, Oakes, and Pine trees, as wee observe in England, very commonly upon Apple, Holly, Bayes, Crabs, and White thorne, sometimes upon Sallow, Hasell, and Oke, never upon Bayes, Holly, Ashes, Elme, and many others. Why it groweth not in all countries and places where these birds are found, for so Brassavolus affirmeth, it is not to be found in the territorie of Ferrara, and was faine to supply himselfe from other parts of Italy. Why if it ariseth from a seed, if sowne it will not grow againe, as Pliny affirmeth, and as by setting the berryes thereof, wee have in vaine attempted its production; why if it commeth from seed that falleth upon the tree, it groweth often downewards and puts forth under the bough, where seed can neither fall nor yet remaine. Hereof beside some others, the Lord Verulam hath taken notice. And they surely speake probably who make it an arboreous excrescence, or rather superplant, bred of a viscous and superfluous sappe the tree it selfe cannot assimilate, and therefore sprouteth not forth in boughs and surcles of the same shape and similarly unto the tree that beareth it, but in a different forme, and secondary unto its specificall intention, wherein once fayling, another forme succeedeth and in the first place that of Misseltoe, in plants and trees disposed to its production. And therefore also wherever it groweth it is of constant shape, and maintaineth a regular figure like other supercrescenses, and such as living upon the stock of others, are termed Parasiticall plants, as Polypody, Mosse, the smaller Capillaries, and many more.

"Now what begot this conceit, might be the enlargement of that part of truth contained in its story. For certaine it is, that some birdes doe feed upon the berries of this vegetable, and we meet in Aristotle with one kind of thrush called ἰξοβόρος, the missell thrush or feeder upon misseltoe. But that which hath most promoted it, is a received proverb, *Turdus sibi malum cacat*, Appliable unto such men as are authors of their owne misfortune. For according unto ancient tradition and Plinies relation, the bird not able to digest the fruit whereon shee feedeth, from her inconverted muting, ariseth this plant, of the berries whereof birdlime is made, wherewith she is after entangled. Now although proverbs bee popular principles, yet is not all true that is proverbiall; and in many thereof there being one thing delivered, and another intended, though the verball expression be false, the proverbe is true enough in the veritie of its intention."

The mediæval opinions regarding certain supernatural agencies.

which were retained to the last by Sir Thomas Browne, did not include some of the properties attributed to the mistletoe:

"As for the Magicall vertues in this plant, and conceived efficacie unto beneficiall intentions, it seemeth unto me a Pagan relique derived from the ancient Druides, the great admirers of the Oake, especially the Misseltoe that grew thereon, . . . the virtue whereof was to resist all poysons, and to make fruitfull any that used it. Vertues not expected from Classicall practice. And did they answer their promise which are so commended in Epilepticall intentions, wee would abate these qualities. Countrey practise hath added another to provoke the after-birth, and in that case the decoction is given unto Cowes. That the berries are poison as some conceive, we are so far from averring, that we have safely given them inwardly, and can confirme the experiment of Brassavolus, that they have some purgative quality."

Such is Sir Thomas Browne's account of the opinions held by the "learned Vulgar" regarding the mistletoe in the year of Grace 1646, the date of the first edition of his wonderful *Pseudodoxia Epidemica*. And it is worthy of note that in the last edition (sixth) of the same work issued in his lifetime, after an interval of thirty-six years, there is no notable change in the text of the paragraphs which deal with the mistletoe. (He merely omits the Bayes and Holly from the list of hosts in which they had been placed by an obvious slip of the pen, and rejects the former from that of the non-hosts.)

The great *Medical* Dictionary of Dr. James, the famous inventor of the antimonial "fever powder," appeared in 1745. (The preface was written by his friend, Dr. Samuel Johnson, who was also believed to have been a copious contributor to its columns.) We there learn that:

"Misseltoe is accounted a cephalic and nervine Medicine, particulary useful for all Kinds of Convulsion-fits, for the Apoplexy, Palsy, and Vertigo; for which purposes, some prefer the Misseltoe of the Hasel to that of the Oak." "Birdlime is a powerful Attractive, and good to ripen hard Tumors and Swellings; It is an Ingredient in the *Emplastrum Diachylon Magnum*."

And further:

"It has the Virtue of mollifying and discussing Tumors, the Parotides, and Abscesses, being mixed with Rosin, and an equal quantity of Wax; it also cures the *Epinyctides*, and, as *Pliny* says, dries up strumous Ulcers, and cures the Epilepsy . . . The Wood is of principal and specific Use in the Epilepsy; it is, also, prescribed for the Apoplexy and Vertigo, taken inwardly, or hung about the Neck: For these disorders it is acknowledged to be effectual, by the unanimous Consent of antient and modern Physicians. We know some, says *J. Bauhine*, who have made use of the Wood of *Viscum*, macerated in Wine, with success, against the Vertigo. The Powder of *Viscum*, especially what grows upon Oaks, not only cures the Epilepsy, but provokes the Menses. It is, also, an *Arcanum* against a Pleurisy, being taken once and again, and a third time, in Water of Carduus and Poppy.

" J. Bauhine writes, that he has several times advised the Use of *Viscum*, bruised and macerated in proper Waters, against the Worms of the Intestines in Children.

" The Powder of the *Viscum* which grows on the *Oxyacanthus*, being infused in White or *Spanish* Wine, and given two Hours before the Paroxysm, or Fit, and the dose repeated, if necessary, has often removed, and perfectly cured, a Quartan.

" The Leaves, after they have been chewed, and ground by the Teeth of labouring Beasts, and Cows, are, by our rustic People esteemed effectual for expelling the Secundines."

These extracts offer a striking example of the persistence, down through tens of centuries, of medical faith in the efficacy of a therapeutic agent whose claims have been utterly discounted in the light of recent science. There seems to be small prospect of a future restoration of the mistletoe to the *All-healing* position which was so devoutly accorded to it by our ancestors. Still we find that recent reports show that its therapeutic fame has not quite died out. It appears to be still used in parts of England as a popular remedy in cases of cardiac trouble. And, like the strophanthus of African arrow-poison fame, it has actually been held to prove a reliable substitute for digitalis!

The prominence of this singular plant in our Christmas festivities is probably due, like that of the ivy, to its comparatively succulent—and suggestively productive—aspect at that season of suppressed vegetation. The peculiar social ceremony so usually connected with the *elevation* of the mistletoe in our homes at that period is one which the old-fashioned practitioner would probably not wish to see abolished. But such questions now, necessarily, lie with the "*New*" *women*, who are making so very energetic advances towards the management of the humanity of the future. The great majority of our adolescents will, perhaps, agree with the sentiments expressed in the quaint (centuries old) stanza:

"Of all the games both rich and rare,
There is a game none can compare;
And that sweet game, as all you know,
Is kissing 'neath the Mistletoe."

The supra-osculatory position which the mistletoe has so long maintained in the minds of the youth of both sexes will probably tend to prolong its celebrity beyond that which future generations may be disposed to grant to its therapeutic properties. And as our twentieth century has hitherto proved so richly productive of medical Jeremiads on the subject of "race suicide," perhaps the suggestions offered by the presence of the over-head *Viscum album*, at a season specially associated with demonstrations of family affection, should not be too austerely criticised as a mere relic of social frivolity.

GENERALISED EMPHYSEMA IN CHILDREN.

CHARTIER AND DENECHAU (*Arch. de Med. des Enf.*, June, 1906) tells us that the introduction of air into the tissues by accident or criminal means is rare. So are cases resulting from traumatic or pathological ulceration of the mouth, or of the nasal fossæ and their sinuses, and from direct penetration of intestinal gas into the abdominal walls. Generally, subcutaneous emphysema is located at the base of the neck or upper part of the thorax, and is produced by a solution of continuity in the broncho-tracheal apparatus. Traumatic emphysema results from fractures of the bones of the thorax. There are cases resulting from ulceration of the larynx, trachea or bronchi. Others result from the rupture of a tuberculous cavity into the mediastinum or neck. Generalised emphysema may be perilobar, mediastinal, or subcutaneous, and is quite frequent in children, due to the porosity of the pulmonary parenchyma and the feeble resistance of the alveoli to pressure. Intense dyspnœa, convulsive cough, and spasm of the glottis are the immediate cause of the passage of air into the tissues. Convulsions, laryngeal spasm, hydrophobia, pertussis, spasmodic cough in pneumonia, and asphyxia from various causes bring about the condition by rapid and repeated elevation of the intrapulmonary pressure. There are other cases in which the mechanical element takes little part, while the degeneration of the lung tissue is the main factor. Such occur in pneumonia, measles, and tuberculosis.—*The American Journal of Obstetrics*, November, 1906.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, November 3, 1906.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 3, 1906, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 20.7 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,101,499. The deaths registered in each of the four weeks ended Saturday, November 3, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Oct. 13	Oct. 20	Oct. 27	Nov. 3			Oct. 13	Oct. 20	Oct. 27	Nov. 3	
22 Town Districts	19.1	18.4	18.4	20.7	19.2	Lisburn -	18.2	4.5	18.2	9.1	12.5
Armagh -	34.4	27.5	27.5	6.9	24.1	Londonderry	13.6	11.2	14.9	26.0	16.4
Ballymena	23.9	23.9	14.4	43.1	26.3	Lurgan -	22.1	22.1	17.7	8.9	17.7
Belfast -	15.5	17.4	17.1	17.4	16.9	Newry -	4.2	16.8	4.2	8.4	8.4
Clonmel -	20.5	15.4	5.1	10.3	12.8	Newtownards	11.4	11.4	11.4	22.9	14.3
Cork -	30.1	23.3	15.8	14.4	20.9	Portadown -	10.3	5.2	5.2	36.2	14.2
Drogheda -	20.4	16.3	8.2	16.3	15.3	Queenstown	39.6	6.6	13.2	6.6	16.5
Dublin - (Reg. Area)	28.7	21.7	21.6	27.4	23.6	Sligo -	14.4	14.4	14.4	4.8	12.0
Dundalk -	8.0	4.0	27.9	16.0	14.0	Tralee -	10.6	21.1	15.9	5.3	13.2
Galway -	7.8	19.4	19.4	15.5	15.5	Waterford -	9.7	15.6	27.3	7.8	15.1
Kilkenny -	9.8	9.8	9.8	9.8	9.8	Wexford -	14.0	14.0	18.7	42.0	22.2
Limerick -	12.3	13.7	19.1	20.5	16.4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, November 3, 1906, were equal to an annual rate of 2.1 per 1,000, the rates varying from 0.0 in thirteen of the districts to 8.7 in Londonderry—the 21 deaths from all causes in that district including 7 from diarrhœal diseases. Among the 122 deaths from all causes in Belfast are 3 from whooping-cough, one from diphtheria, one from enteric fever, and 10 from diarrhœal diseases. The 15 deaths in Limerick include one from diphtheria 2 from enteric fever, and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, November 3, 1906, amounted to 231—111 boys and 120 girls; and the deaths to 204—94 males and 110 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 28.1 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the Area, the rate was 27.4 per 1,000. During the forty-four weeks ending with Saturday, November 3, the death-rate averaged 23.1, and was 2.0 below the mean rate for the corresponding portions of the ten years, 1896—1905.

Of the 204 deaths registered there were 2 from measles, 3 from whooping-cough, one from diphtheria, one from enteric fever, and 7 from diarrhœal diseases—4 of the last being deaths of infants under one year of age and one that of a child 2 years of age. There was one death of an infant under one year from enteritis, and there were 2 deaths from *gastro-enteritis*—one of the latter being that of an infant under one year of age and one that of a child one year of age. In the 3 preceding weeks, deaths from measles numbered one, 0, and 2; deaths from whooping-cough numbered 2, 2, and 2; deaths from diphtheria were one, 2, and 0; deaths from enteric fever were 4, 4, and 2; and deaths from diarrhœal diseases were 12, 12, and 8, respectively. Influenza caused 2 deaths.

There were 4 deaths from broncho-pneumonia and 6 deaths from *pneumonia* (not defined).

Among the 38 deaths from all forms of tuberculous disease were 13 from tubercular phthisis, 8 from *phthisis*, 3 from tubercular meningitis, 3 from tubercular peritonitis, and 11 from other forms of the disease. Deaths from all forms of the disease in the 3 preceding weeks were 23, 26, and 30, respectively.

Carcinoma caused 6 deaths, sarcoma caused one death, and cancer (undefined) caused 3 deaths.

The deaths of 6 infants, prematurely born, were registered.

Diseases of the brain and nervous system caused 14 deaths, including 7 from *convulsions*, 6 of the latter being those of infants under one year of age and one that of a child 3 years of age.

There were 33 deaths from diseases of the heart and blood vessels, and 32 deaths from bronchitis.

There was only one accidental death, that of a child aged 3 years caused by burns.

In 6 instances the cause of death was " uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 children under 5 years of age (including 3 infants under one year old) and the death of one person aged 85 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the " Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and the Executive Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended November 3, 1906, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	Oct 13	-	*	*	10	1	-	4	-	6	8	11	-	*	*	*	40
	Oct. 20	-	*	*	14	1	-	5	-	5	22	7	-	*	*	*	54
	Oct. 27	-	*	*	9	-	-	5	-	2	19	15	-	*	*	*	50
	Nov. 3	-	*	*	12	-	-	19	-	7	18	10	-	*	*	*	66
Rathmines and Rathgar Urban District	Oct. 13	-	*	*	1	-	-	-	-	-	1	-	-	*	*	*	2
	Oct. 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 27	-	*	*	1	-	-	-	-	-	1	-	-	*	*	*	2
	Nov. 3	-	*	*	1	-	-	1	-	-	-	-	-	*	*	*	2
Pembroke Urban District	Oct. 13	-	-	-	-	-	-	-	-	-	1	-	-	*	1	-	2
	Oct. 20	-	-	-	1	-	-	-	-	1	-	-	-	*	-	-	2
	Oct. 27	-	-	-	-	-	-	-	-	1	-	-	1	*	-	-	2
	Nov. 3	-	-	-	-	-	-	-	-	1	-	-	-	*	-	-	1
Blackrock Urban District	Oct. 13	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 27	-	*	*	-	-	-	-	-	-	1	1	-	*	*	*	2
	Nov. 3	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	Oct. 13	-	*	*	-	-	-	-	-	-	-	1	-	*	*	*	1
	Oct. 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Oct. 27	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
	Nov. 3	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
City of Belfast	Oct. 13	-	*	*	48	-	-	8	-	10	12	10	-	*	*	*	88
	Oct. 20	-	*	*	32	-	-	8	-	8	14	5	-	*	*	*	67
	Oct. 27	-	*	*	33	-	-	4	1	9	11	9	-	*	*	*	67
	Nov. 3	-	*	*	33	-	-	14	-	8	2	8	2	*	*	*	57

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Thirteen cases of measles were admitted into hospital during the week ended Saturday, November 3, 5 were discharged, there were 3 deaths, and 32 cases remained under treatment at its close.

Eighteen cases of scarlet fever were admitted to hospital, 15 were discharged, and 86 cases remained under treatment at the close of the week. This number is exclusive of 18 convalescents under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

Two cases of typhus were discharged from hospital and 2 cases remained under treatment at the close of the week.

One case of diphtheria was admitted to hospital, one was discharged, there was one death, and 16 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 10 were discharged, and 73 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospital, 11 were discharged, and 32 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended November 3, in 76 large English towns, including London (in which the rate was 14.0), was equal to an average annual death-rate of 14.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 16.0 per 1,000, the rate for Glasgow being 16.2, and for Edinburgh 14.4.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General for Ireland has been favoured by Sir Henry D. Littlejohn, M.D., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended November 3, 1906. From this Report it appears that of a total of 28 cases notified 12 were diphtheria, 10 scarlet fever, and 6 erysipelas. Among the 257 cases of infectious diseases in hospital at the close of the week were 102 cases of scarlet fever, 56 of diphtheria, one of membranous croup, 30 of enteric fever, 23 of measles, 11 of erysipelas, and 2 of whooping-cough.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of October*, 1906.

Mean Height of Barometer, - - -	29.739 inches.
Maximal Height of Barometer (25th, at 9 a.m.),	30.391 ,,
Minimal Height of Barometer (29th, at 9 p.m.),	29.264 ,,
Mean Dry-bulb Temperature, - - -	50.0°.
Mean Wet-bulb Temperature, - - -	48.0°.
Mean Dew-point Temperature, - -	45.9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.318 inch.
Mean Humidity, - - - - -	86.7 per cent.
Highest Temperature in Shade (on 6th), -	65.1°.
Lowest Temperature in Shade (on 20th), -	32.9°.
Lowest Temperature on Grass (Radiation) (20th),	27.9°.
Mean Amount of Cloud, - - -	55.8 per cent.
Rainfall (on 22 days), - - - -	3.318 inches.
Greatest Daily Rainfall (on 20th), - -	.499 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

True to its wonted character, October of this year was a rainy month—the total fall being 3.318 inches on 22 "rain days." About half an inch was recorded on the 4th (.455 inch), 11th (.498 inch), and 20th (.499 inch). But the month was mild, the mean temperature being 1.8° in excess of the average, and as much as 4.0° above that of October, 1905, which was a very cold month. In fact, had it not been for sharp cold snaps from the 17th to the 20th and from the 27th to the end, this month had bid fair to establish a record for mildness. Snow fell on the loftier summits of the Dublin and Wicklow mountains on the night of the 30th. Thunder and lightning occurred in England, Wales, and the S.E. of Ireland in connection with a deep barometrical depression during the closing days.

In Dublin the arithmetical mean temperature (51.2°) was very decidedly above the average (49.4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 50.0°. In the forty-two years ending with 1906, October was coldest in 1892 (M. T. = 44.8°) and in 1896 (M. T. = 45.0°). It was warmest in 1876 (M. T. = 53.1°). The M. T. in 1898 was 52.8°. In 1905 it was 47.2°.

The mean height of the barometer was 29.739 inches, or 0.101 inch below the corrected average value for October—namely, 29.840 inches. The mercury rose to 30.391 inches at 9 a.m. of the 25th, and fell to 29.264 inches at 9 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 1.127 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50.0°, or 5.7° below the value for September, 1906. The arithmetical mean of the maximal and minimal readings was 51.2°, compared with a thirty years' average of 49.4°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .485), the mean temperature was 51.0°, or 1.8° above the average mean temperature for October, calculated in the same way, in thirty years, 1871–1900, inclusive (49.2°). On the 6th the thermometer in the screen rose to 65.1°—wind, S.; on the 20th the temperature fell to 32.9°—wind, calm. The minimum on the grass was 27.9° on the 20th.

The rainfall was 3.318 inches, distributed over 22 days; both the rainfall and the rainy days were above the average. The average rainfall for October in the thirty-five years, 1866–1900, inclusive, was 2.940 inches, and the average number of rainy days was 18. In 1880 the rainfall in October was very large—7.358 inches on 15 days. In 1875, also, 7.049 inches fell on 26 days. On the other hand, in 1904 only .454 inch fell on 11 days, in 1890 only .639 inch fell on but 11 days; in 1884, only .834 inch on but 14 days; and in 1868 only .856 inch on 15 days. In 1905 the rainfall was 1.196 inches on 16 days.

High winds were noted on 11 days, but attained the force of a gale on only one occasion—the 26th. The atmosphere was more or less foggy in Dublin on the 3rd, 11th, 19th, 20th, 25th, 30th and 31st. The duration of bright sunshine was estimated at 124 hours, compared with 127.25 hours in 1900, 115.25 hours in 1901, only 84.25 hours in 1902, 132.75 hours in 1903, 93.25 hours in 1904, and 110.75 hours in 1905. Lunar halos were seen on the 25th and 31st; there was a solar halo on the 21st. Lightning occurred on the evenings of the 28th and 30th.

The rainfall in Dublin during the ten months ending October 31st amounted to 19.439 inches on 168 days, compared with 12.366 inches on 123 days during the same period in 1887 (the dry year), 20.466 inches on 145 days in 1901, 24.481 inches on 172 days in 1902, 27.882 inches on 196 days in 1903, 19.601 inches on 163 days in 1904, 20.462 inches on 161 days in 1905, and a thirty-five years' average of 22.820 inches on 163 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. Thomas H. Hill, Sch., reports that the mean height of the barometer was 29.739 inches, the range of atmospheric pressure being from 30.390 inches at 9 a.m. of the 25th to 29.268 inches at 9 p.m. of the 29th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50.8°. The arithmetical mean of the daily maximal and minimal temperatures was 51.2°. The screened thermometers rose to 65.1° on the 6th, and fell to 32.0° on the 30th. On this latter date the grass minimum was 28.3°, but it was 23.3° on the 20th, and ground frost was felt on 7 nights. On the 7th the black bulb *in vacuo* rose to 115.7°. Rain fell on 20 days to the amount of 3.183 inches, the greatest fall in 24 hours being .511 inch on the 11th. The duration of bright sunshine according to the Campbell-Stokes recorder was 99.7 hours, of which 7.4 hours occurred on the 18th. The mean daily sunshine was 3.2 hours. The mean temperature of the soil at 9 a.m., at a depth of 1 foot, was 51.7°; at a depth of 4 feet it was 54.0°. The subsoil temperature at 1 foot decreased from 55.5° on the 5th to 45.2° on the 31st. At 4 feet it decreased from 56.0° on the 1st to 51.5° on the 31st.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'B. Furlong, C.B., returns the rainfall in October at 3.43 inches on 24 days, compared with 2.760 inches on 20 days in 1902, 3.820 inches on

26 days in 1903, only .290 inch on 12 days in 1904, 1.01 inches on 14 days in 1905, and a twenty-one years' average (1885–1905) of 2.904 inches on 16.4 days. On the 4th .60 inch fell. Since January 1, 1906, 18.60 inches of rain have fallen at this station on 165 days.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 2.849 inches on 20 days, the greatest fall in 24 hours being .462 inch on the 4th. The mean shade temperature was 47.9°, the extremes being—highest, 63.0° on the 7th; lowest, 28° on the 19th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 24 days to the amount of 4.52 inches, compared with 2.40 inches on 21 days in 1901, 3.45 inches on 24 days in 1902, 3.38 inches on 26 days in 1903, .42 inch on 9 days in 1904, and 1.54 inches on 15 days in 1905. The greatest measurement in 24 hours was .75 inch on the 20th. The mean temperature in the shade was 50.7°, the range being from 63° on the 6th to 33° on the 20th. The mean temperature of October was 50.0° in 1901, 50.9° in 1902, 50.8° in 1903, 51.6° in 1904, and 47.1° in 1905.

Dr. Christopher Joynt, F.R.C.P.I., registered 3.395 inches of rain on 21 days at 21 Leeson Park, Dublin, the largest measurement in 24 hours being .570 inch on the 20th.

Miss Muriel E. O'Sullivan recorded a rainfall of 4.035 inches on 22 days at White Cross, Stillorgan, Co. Dublin. The heaviest fall in 24 hours was .810 inch on the 20th. On the 4th .550 inch fell, and on the 11th .540 inch.

Mr. R. Cathcart Dobbs, J.P., reports that the rainfall in October, at Knockdolian, Greystones, Co. Wicklow, amounted to 5.205 inches on 23 days. Of this quantity, .870 inch fell on the 4th. From January 1st, 1906, up to October 31st, rain fell at Knockdolian on 128 days to the total amount of 20.998 inches. In 1901 the rainfall in the corresponding ten months was 28.030 inches on 135 days; in 1902, 31.811 inches on 140 days; in 1903, 30.965 inches on 181 days; in 1904, 22.087 inches on 151 days; and in 1905, 22.754 inches on 131 days.

Mr. William Miller states that in the City of Cork there were 26 days with rain during the month—total fall, 4.14 inches, which was 0.84 inch over the average. The greatest day's rain was that of the 25th—0.51 inch. The rainfall of the past ten months was 24.94 inches, which was 4.75 inches short of the average for the same period.

At the Ordnance Survey Office, Phœnix Park, Dublin, the

October rainfall was 2.551 inches on 20 days, compared with 1.365 inches on 17 days in 1905, .650 inch on 10 days in 1904, and 2.339 inches on 24 days in 1903. The heaviest fall in 24 hours was .580 inch on the 11th. At the Royal Botanic Gardens, Glasnevin, rain fell on 22 days to the amount of 3.170 inches, the greatest daily fall being .61 inch on the 4th.

The Rev. Arthur Wilson, M.A., recorded a rainfall of 6.61 inches on 27 days at the Rectory, Dunmanway, Co. Cork. It was fairly fine from the 9th to the 19th and on the 30th and 31st. The rest of the month was generally wet, but mild. The heaviest falls in 24 hours were .76 inch on the 20th, .69 inch on the 21st, and .68 inch on the 27th. The rainfall for 10 months of 1906 is 43.29 inches, compared with 43.18 inches in 1905.

Dr. T. H. Peyton, Resident Medical Superintendent, reports that the rainfall in October at the Royal National Hospital for Consumption for Ireland at Newcastle, Co. Wicklow, amounted to 5.755 inches on 20 days. The heaviest falls in 24 hours were .860 inch on the 26th and .710 inch on the 20th. The total rainfall for 1906 up to October 31st was 23.446 inches. The mean dry-bulb temperature for October was 54.6°. The maximal shade temperature was 63.5° on the 7th. On the 29th the minimum was 30.0°.

Dr. J. Byrne Power, D.P.H., F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 51.7°, being equal to the average for October during 19 previous years (1873–83 and 1898–1905); the extremes were—highest, 64.5°, on the 7th; lowest, 32.5°, on the 20th. At Bournemouth the mean was 53.8°, the extremes being—highest, 68°, on the 3rd; lowest, 35°, on the 18th. The mean daily range of temperature at Kingstown was 10.5°, at Bournemouth it was 11.4°. The mean temperature of the sea at Sandycove bathing-place was 51.1°, being equal to the average for the month during the previous 8 years. The mean relative humidity was 80 per cent., or 1 per cent. above the average for the month during the previous 5 years. The rainfall amounted to 3.34 inches on 22 days, being 0.78 inch above the average for the month during 16 previous years (1873–83 and 1901–1905), at Bournemouth it was 6.84 inches on 23 days—more than double that of Kingstown. The duration of bright sunshine was 106.3 hours, or 6.2 hours above the average for the month during the previous 5 years, as compared with 109.4 hours at the Ordnance Survey Office, Phœnix Park, 73.5 hours at Southport, and 103.7 hours at Bournemouth.

PERISCOPE.

CINNAMIC AND COUMARIC ACIDS IN TUBERCULOSIS.

THE discovery that cinnamic acid and its salts, when injected subcutaneously or intravenously, have the property of causing leucocytosis, led to their use in the treatment of tuberculous processes such as phthisis and lupus. The processes were said to be converted into dense fibrous cicatrices, and in this way an ideal cure was claimed. Further experiments led to the conclusion that this treatment was not so much a specific as a means of exercising an active influence on the disease, and sanatorium treatment, where obtainable, still holds first place. Observations, however, yield varying results, and for those who desire to give the cinnamic acid treatment a further trial a few notes on the drug may be useful. Cinnamic or cinnamylic acid ($C_6H_5.CH:CH.CO_2H$) occurs in transparent micaceous crystals, soluble in alcohol or ether, very slightly soluble in water. The pure acid, prepared from cinnamon oil or storax, should alone be used for internal use; the artificial product from benzaldehyde is more or less impure. It is better, however, to prescribe the sodium salt, which possesses all the advantages of the acid without any of its drawbacks. Sodium cinnamate, originally introduced as "Hetol," is a white powder with a faint suggestion of cinnamon in odour and taste. It is soluble in water 1 in 20, in glycerine 1 in 10; the dose, hypodermically or *per os*, is 2 to 5 grains. For intravenous injection a 1 in 20 solution in normal saline solution may be used, while for hypodermic use *Glycerinum Sodii Cinnamatis* is generally found best. This is a 10 per cent. solution in sterilised glycerine, and is given in doses of 16 minims (1 cc.). It requires care in preparation to avoid formation of acrolein. It has been observed, in connection with the therapeutic properties of the benzene derivatives that the introduction of a hydroxyl group (OH) in the aromatic nucleus increases the physiological action, as in the case of benzoic and salicylic (hydroxybenzoic) acids. Coumaric or oxy-cinnamic acid, C_6H (OH). $CH:CH.CO_2H$, follows this rule, and has properties similar to, but more intense than, cinnamic acid. It is prepared from coumarin, the odorous principle of Tonquin beans, and sodium ortho-coumarate is the principal salt used medicinally. The meta- and para-salts have also been tried; the former is slightly more active, but its preparation is more complicated, while the latter is less active than the ortho-salt. Sodium ortho-coumarate is given hypodermically as a 22 per cent. aqueous solution, in doses of 25 minims, once or twice a week. This solution is a clear yellow liquid, and is perfectly stable. The salt is very soluble in water, and stronger solutions may be given if desired. A still further stage in this treatment has been reached with *Tylmarin*, which is acetyl-ortho-coumaric acid. Acetyl-salicylic acid ("aspirin") having been found to have advantages over salicylic acid, it has been thought that by acetylating the coumaric acid a better preparation would be obtained This substance occurs in colourless crystals, only slightly soluble in water, and is given in doses of 5 to 10 grains in cachets or tablets. So far it is recommended as an adjuvant to the cinnamic and coumaric treatments, and further experiments are looked for. In the body it is hydrolised into ortho-coumaric and acetic acids.—*The Prescriber*, Vol. I., No. 2, Edinburgh, November, 1906.

DESIGN *versus* EVOLUTION.

THE following striking passage is taken from Paley's "Natural Theology," Ch. IX.:—"The next circumstance which I shall mention under this head of muscular arrangement is so decisive a mark of intention that it always appeared to me to supersede, in some measure, the necessity of seeking for any other observation on the subject, and that circumstance is the tendons which pass from the leg to the foot being bound down by a ligament to the ankle. The foot is placed at a considerable angle to the leg. It is manifest, therefore, that flexible strings passing down the interior of the angle, if left to themselves, would, when stretched, start from it. The obvious preventive is to tie them down. And this is done in fact. Across the instep, or rather just above it, the anatomist finds a strong ligament, *under* which the tendons pass to the foot. The effect of the ligament as a bandage can be made evident to the senses, for if it be cut the tendons start up. The simplicity yet the clearness of this contrivance, its exact resemblance to established resources of art, place it among the most indubitable manifestations of design with which we are acquainted. There is also a further use to be made of the present example, and that is, as it precisely contradicts the opinion that the parts of animals may have been all formed by what is called *appetency*—*i.e.*, endeavour perpetuated and imperceptibly working its effect through an incalculable series of generations. We have here no endeavour, but the reverse of it—a constant renitency and reluctance. The endeavour is all the other way. The pressure of the ligament constrains the tendons; the tendons react upon the pressure of the ligament. It is impossible that the ligament should ever have been generated by the exercise of the tendon, or in the course of that exercise, for as much as the force of the tendon perpendicularly resists the fibre which confines it, and is constantly endeavouring, not to form, but to rupture and displace the threads of which the ligament is composed."

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